NEXCOM International Co., Ltd.

Multi-Media Solutions

Digital Signage Platform

NDiS 166

User Manual

NEXCOM International Co., Ltd.
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Preface

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Acknowledgements

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Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices and describes how to keep the system CE compliant.

Declaration of Conformity

FCC

This equipment has been tested and verified to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

NEXCOM is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2002/95/EU, to be your trusted green partner and to protect our environment.

RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, NEXCOM has established an engineering and manufacturing task force in to implement the introduction of green products. The task force will ensure that we follow the standard NEXCOM development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NEXCOM are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize NEXCOM RoHS Products?

For existing products where there are non-RoHS and RoHS versions, the suffix "(LF)" will be added to the compliant product name.

All new product models launched after January 2006 will be RoHS compliant. They will use the usual NEXCOM naming convention.

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Warranty and RMA

NEXCOM Warranty Period

NEXCOM manufactures products that are new or equivalent to new in accordance with industry standard. NEXCOM warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by NEXCOM. HCP series products (Blade Server) which are manufactured by NEXCOM are covered by a three year warranty period.

NEXCOM Return Merchandise Authorization (RMA)

- Customers shall enclose the "NEXCOM RMA Service Form" with the returned packages.
- Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "NEXCOM RMA Service Form" for the RMA number apply process.
- Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, NEXCOM is not responsible for the devices/parts.
- Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."
- Any products returned by NEXCOM to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

System Level

- Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.
- Replace with 3rd party products if needed.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

- Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

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Warnings

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

Cautions

Electrostatic discharge (ESD) can damage system components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Safety Information

Before installing and using the device, note the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Follow all warnings and cautions in this manual.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Installation Recommendations

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needlenose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

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Safety Precautions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.
7. Do not leave this equipment in either an unconditioned environment or in a above 40°C storage temperature as this may damage the equipment.
8. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.
9. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
10. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
13. Never pour any liquid into an opening. This may cause fire or electrical shock.
14. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
15. If one of the following situations arises, get the equipment checked by service personnel:

    a. The power cord or plug is damaged.

    b. Liquid has penetrated into the equipment.

    c. The equipment has been exposed to moisture.

    d. The equipment does not work well, or you cannot get it to work according to the user's manual.

    e. The equipment has been dropped and damaged.

    f. The equipment has obvious signs of breakage.
16. Do not place heavy objects on the equipment.
17. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
18. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
19. The computer is provided with CD drives that comply with the appropriate safety standards including IEC 60825.

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Technical Support and Assistance

1. For the most updated information of NEXCOM products, visit NEXCOM's website at www.nexcom.com.

2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
   - Product name and serial number
   - Detailed information of the peripheral devices
   - Detailed information of the installed software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wordings of the error messages

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.
2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.
3. CompactFlash: Turn off the unit's power before inserting or removing a CompactFlash storage card.

Conventions Used in this Manual

Warning: Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.

Caution: Information to avoid damaging components or losing data.

Note: Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NDiS 166 package that you received is complete. Your NDiS 166 package should have all the items listed in the following table.

Item	P/N	Name	Specification	Qty
1	5044440080X00	Gasket for Intel CPU KGS:C-4505(35x35x1)+G4000	35x35x 1.1mm	1
2	7400080005X00	Power Adapter w/C6 Socket L.T.E.:LTE90E-S2-210	80W 12V/6.67A Mini DIN 4-Pin Male Plug	1
3	50311F0100X00	Round Head Screw w/Spring+Flat Washer Long x4	P3x6 iso/SW6x0.5 NI	1
4	602DCD0306X00	(N)NDiS 166 Manual Driver CD		1

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Ordering Information

The following provides ordering information for NDiS 166.

- **NDiS 166 (P/N: TBD)**
  - Intel® Core™ i5/i7 series processors
  - Intel® QM67
  - Intel® Integrated Graphics

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Chapter 1: Product Introduction

Overview

NDiS 166 is specially designed to be mounted behind the large-size display device such as LCD TV or PDP. NDiS 166 supports dual display output by DVI, HDMI or VGA. The NDiS 166 operates on Intel® Core™ i5/i7 series processors with QM67 integrated graphics controller. NDiS 166 can smoothly playback dual Full HD video. NDiS 166 is ideal as advanced digital signage player for advertising, hospitality, brand promotion and digital menu board application.

Key Features

- 2nd Generation Intel® Core™ i5/i7 Series Platform
- Compact and Fan-Less Design
- Up to 16GB with un-buffered and Non-ECC DDR3 1066/1333 MHz SDRAM
- Intel® Integrated Graphics Engine
- Dual Independent Display Supported
- Intel WG82579LM Gigabit Ethernet controller
- Two Mini-PCIe

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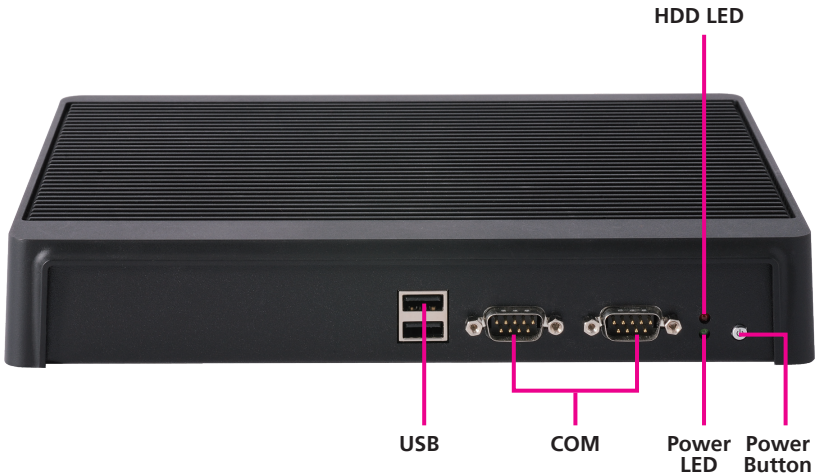
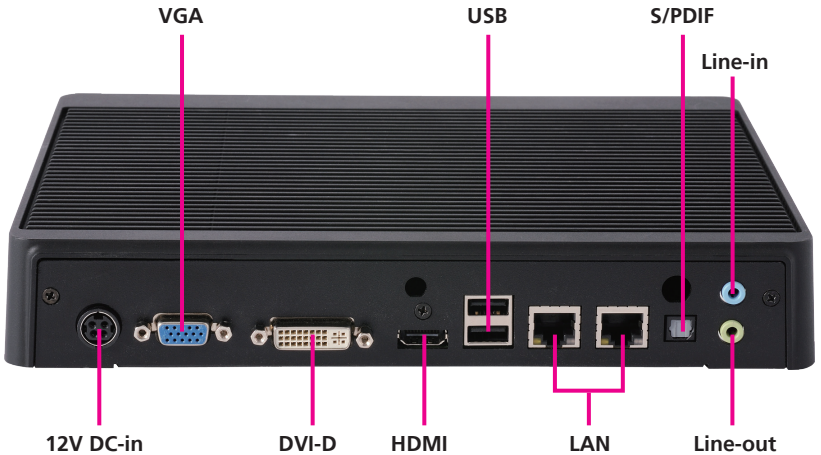
Physical Features

Front panel



Side panel



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Hardware Specifications

System

Processor

- Quad Core: Intel® Core™ i7-2710QE processor 2.1 GHz, 45W (system with cooler)
- Dual Core: Intel® Core™ i5-2510E processor 2.5 GHz, 35W (fanless)
- FSB
  - 1066/1333 MHz

Chipset

- Intel® QM67 PCH

Main Memory

- Two 240-pin 25° angled DDR3 DIMM sockets
- DDR3 1066/1333 MHz SDRAM with un-buffered and Non-ECC memory module
- Support up to 16GB memory

Graphics

- Graphics chip
  - Intel HD integrated graphic
  - Intel® Dynamic Video Memory Technology
  - Image Rotate by driver support
- Analog CRT
  - DB15 connector
  - Integrated 300MHz DAC
  - Analog monitor supports up to QXGA
  - Supports CRT Hot-Plug
- DVI
  - External DVI-D interface
  - TMDS transmitter via SDVO interface
- HDMI

  Integrated HDMI (iHDMI)
  - Video support for CEA modes 480i/p, 576i/p, 720p, 1080i/p and PC modes though dot clock
  - Intel HD Audio support
  - Integrated Intel HD Audio codec
  - Dolby* AC3 compress, Dolby* Digital, Dolby* DTS (full support)
  - PCM audio support
- Dual Display
  - Dual independent display: CRT+HDMI
  - Dual independent display: DVI+HDMI
  - Dual independent display: DVI+CRT

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Network

- Intel® WG82579LM GbE controller
- Intel® 82574 GbE controller, supports WoL.
- PXE LAN boot ROM for Ethernet Boot up
- Support WOL
- 2 x RJ45 connector with LEDs
- Support Intel® Active Management Technology 7.0 support

Storage

- One JST 2.54mm 4-pin power connector for SATA device
- One 7-pin SATA connector
- One SATA + Power 90° connector
- One 2.5" HDD drive bay

Audio

- Audio 1
  - ALC 888 HD codec
  - Speaker-out with amplifying feature (1W, 8ohm)
  - One audio jack for analog input (programmable as analog output)
  - One SPDIF for digital output
- Audio 2
  - HDMI for PCM audio output

I/O Interfaces

- Serial
  - DB9 COM 1 (RS232) connector at the front panel
  - DB9 COM 2 (RS232) connector at the front panel
- USB
  - USB 2.0 ports 1~2 at the rear panel
  - USB 2.0 ports 3~4 at the front panel
  - USB 2.0 Port 5~6 reserved, JST
  - USB 2.0 Port 7 to mini-PCIe
  - USB 2.0 Port 8 to mini-PCIe
- GPIO
  - 8 GPIO lines (GPI 0~3 and GPO 0~3); TTL Level (0/5V)
  - 2x6 pin header, 2.54mm
- Others
  - OnBoard buzzer
  - RTC reset: 1x3 pin header, 2.54mm
  - IR interface: 1x5 pin header, 2.54mm
  - Reset: 1x2 pin header, 2.54mm

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Power Supply

- Onboard DC to DC
  - Power range design: +12V +/-10% DC input
  - 4-pin Mini-DIN power jack
  - ATX power mode
  - Supports wake up alarm
  - Supports WOL
  - Support power on after failure
  - Support soft off
- External adapter
  - +12V DC output 96W

RTC Battery

- On chip RTC with battery back up / One External Li-ion Battery
- RTC tolerance less than 2sec (24 hours) under 25°C environment

BIOS

- AMI system BIOS
- SPI 6416Mbits flash ROM
- Support Intel AMT 7.0

System Management

- Monitoring
  - Super IO built-in function (IT8728F)
  - Monitoring of 5 voltages, 3 temperature
    4 voltage (For +3.3V, +5V, +12V, Vcore)
    3 Temperatures (CPU, two external Temperature Sensor)
    Two FAN 3-pin connectors
- Watchdog
  - Watchdog timeout is programmable by software from 1 second to 255 seconds and from 1 minute to 255 minutes
  - Tolerance: 15% under room temperature 25°C

Operating System Support

- Microsoft
  - XP / Vista / Windows 7 / WES2009 / WES7

Main Board

External I/O

- Front I/O
  - Two USB 2.0 ports
  - Two RS232 COM ports
  - Power Button
  - One power LED (green)
  - One HDD LED (red)
  - On/Off switch

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- Rear I/O
  - One audio-out port
  - One audio-in port
  - One SPDIF port
  - Two USB 2.0 ports
  - Two RJ45 Gigabit LAN ports
  - One HDMI port
  - One DVI-D port
  - One VGA port
  - +12V DC-in jack

Physical Characteristics

- Dimensions (W x D x H)
  - 250mm x 194mm x 40mm (without bracket)
- Color
  - Black
- Mounting
  - Wall mount bracket
  - VESA mount
- Cooling system
  - Fanless

Expansion

- Two Mini-PCIe slots
- Supports Wireless LAN module & DVB-T TV-tuner module
- Support wake on WLAN feature

Environment

- Operating temperature: 100% CPU loading and component thermal profile: 0 ~ 40 °C
- Storage temperature: -40°C ~ 80°C
- Relative humidity (non-condensing): 95%

Certificate

- CE
- FCC Class A

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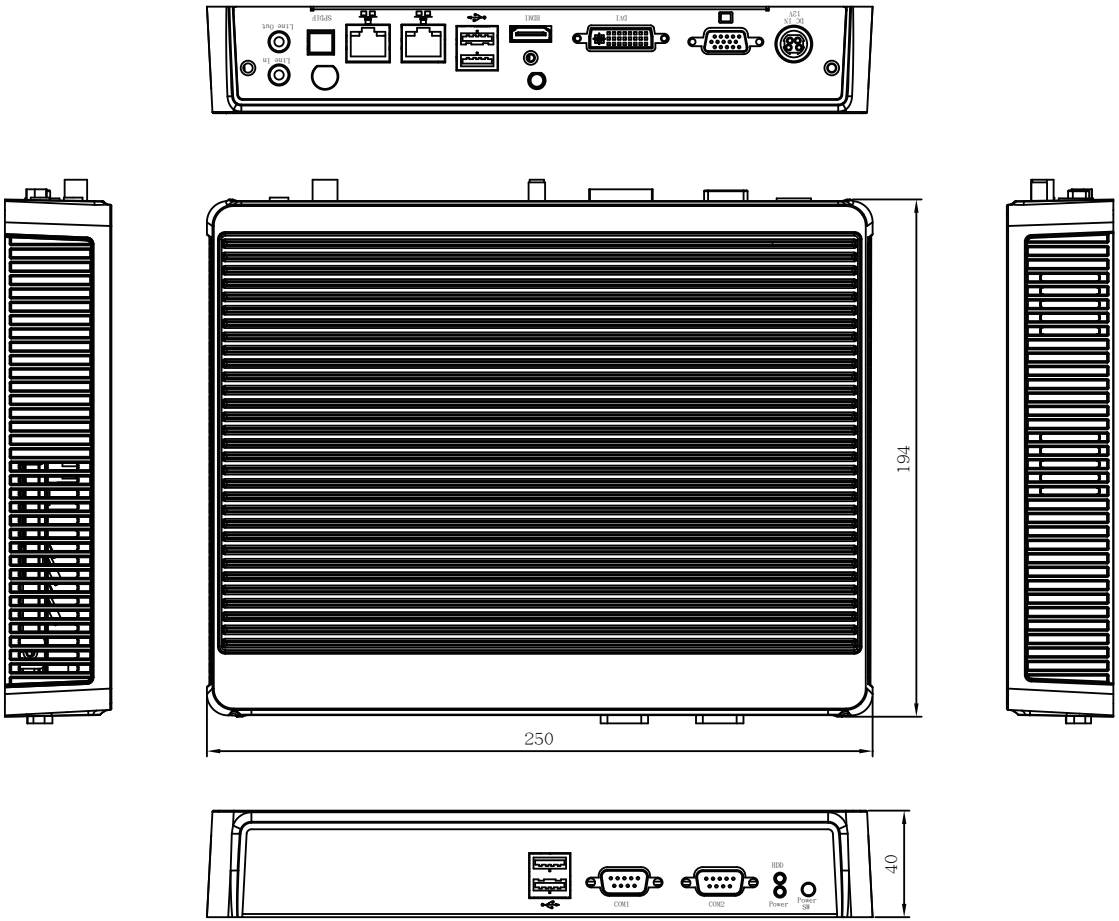
Mechanical Dimensions



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Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers on the motherboard. Note that the following procedures are generic for all NDiS 166 series.

Before You Begin

- Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.
- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
  - A Philips screwdriver
  - A flat-tipped screwdriver
  - A set of jewelers Screwdrivers
  - A grounding strap
  - An anti-static pad
- Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.
- Before working on internal components, make sure that the poweris off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environment tend to have less static electricity
- than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

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Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on the computers that are still connected to a power supply can be extremely dangerous.

Follow the guidelines below to avoid damage to your computer or yourself:

- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

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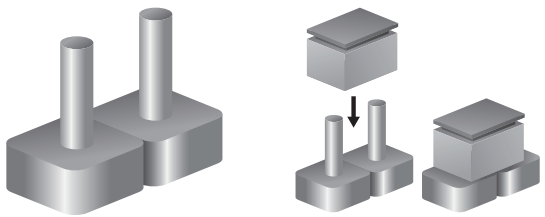
Jumper Settings

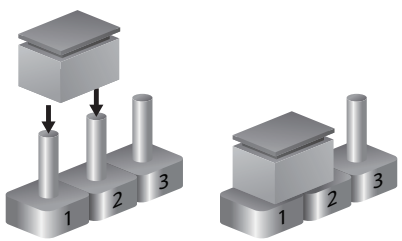
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is **short**. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is **open**.

Refer to the illustrations below for examples of what the 2-pin and 3-pin jumpers look like when they are short (on) and open (off).

Two-Pin Jumpers: Open (Left) and Short (Right)



Three-Pin Jumpers: Pins 1 and 2 Are Short



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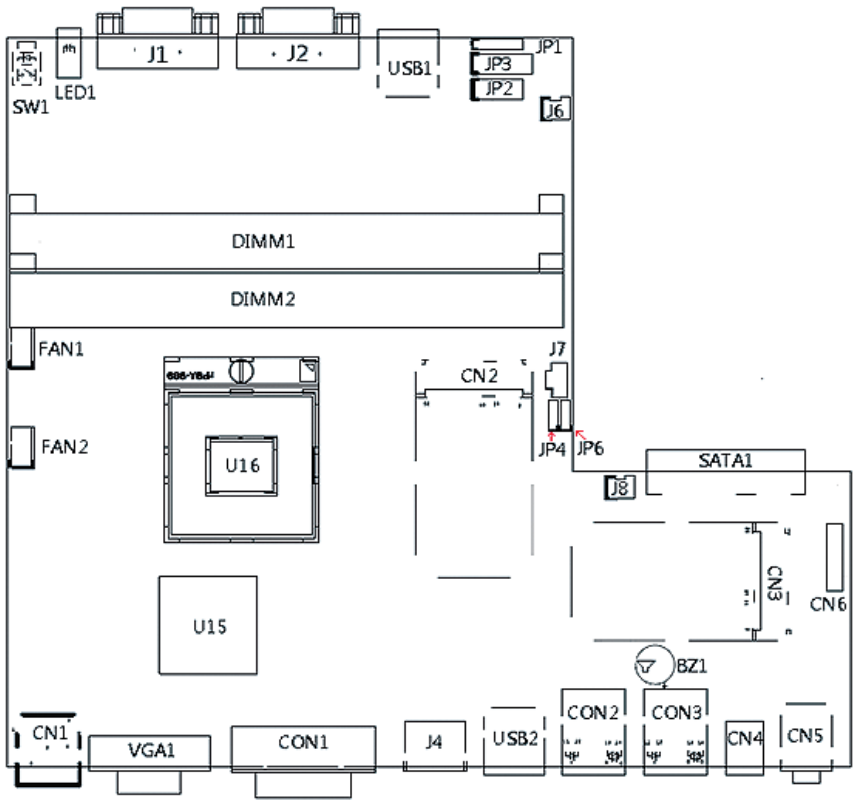
Locations of the Jumpers and Connectors

NDiB 166

The figure on the right is the NDiB 166 motherboard which is the motherboard used in the NDiS 166 system. It shows the locations of the jumpers and connectors.



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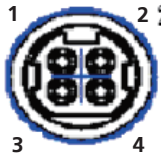
External Connectors Pin Definitions

This section provides descriptions, illustrations and pin definitions of the external connectors.

Connector Specification

Power Input Connector

CN1 (4-pin power jack with lock)



Pin	Definition
1	DC-IN (+12VSB)
2	DC-IN (+12VSB)
3	GND
4	GND

ATX Power Switch

SW1 (push button with LED and without lock)

Status	LED Color
Standby	Red
Operation	Blue

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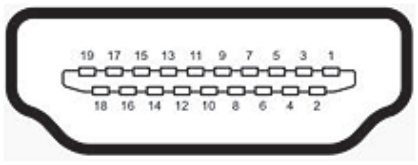
HDMI Type A Connector

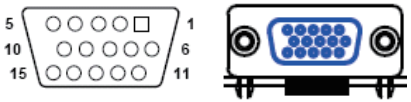
J6



Pin	Definition	Pin	Definition
1	TMDS Data2+	2	TMDS Data2 Shield
3	TMDS Data2–	4	TMDS Data1+
5	TMDS Data1 Shield	6	TMDS Data1–
7	TMDS Data0+	8	TMDS Data0 Shield
9	TMDS Data0–	10	TMDS Clock+
11	TMDS Clock Shield	12	TMDS Clock–
13	CEC	14	NC
15	SCL	16	SDA
17	DDC/CEC/HEC Ground	18	Power (VCC5)
19	Hot Plug Detect		

VGA Connector

VGA1



Pin	Definition	Pin	Definition
1	RED	2	GREEN
3	BLUE	4	NC
5	Gnd	6	Gnd
7	Gnd	8	Gnd
9	VCC (VCC5)	10	Gnd
11	NC	12	DDC Data
13	HSYNC	14	VSYNC
15	DDC Clock		

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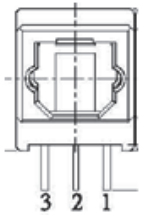
DVI-I Connector

CON1

Pin	Definition	Pin	Definition
1	TMDS DATA2-	2	TMDS DATA2+
3	TMDS DATA 2/4 Shield	4	TMDS Data 4-
5	TMDS Data 4+	6	DDC clock
7	DDC data	8	
9	TMDS Data 1-	10	TMDS Data 1+
11	TMDS Data 1/3 shield	12	TMDS Data 3-
13	TMDS Data 3+	14	Power (VCC5)
15	Ground	16	Hot plug detect
17	TMDS data 0-	18	TMDS data 0+
19	TMDS data 0/5 shield	20	TMDS data 5-
21	TMDS data 5+	22	TMDS clock shield
23	TMDS clock+	24	TMDS clock-
C1		C2	
C3		C4	
C5	Analog ground		

S/PDIF Connector

CN4



Pin	Definition	Pin	Definition
1	GND	2	VCC (VCC3)
3	S/PDIF OUT		

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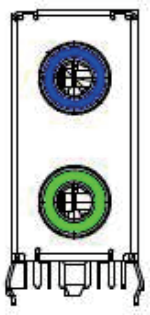
Audio Jack

CN5



Pin	Definition	Pin	Definition
1	GND	2	FRONT_LCI
3	GND	4	FRONT-JD
5	FRONT_RCI		
		22	LINE1-LP
23	GND	24	LINE1-JD
25	LINE1-RP		

LAN connector

CON2 / CON3

Pin	Definition	Pin	Definition
1	TCT	2	MDI3-
3	MDI3+	4	MDI2-
5	MDI2+	6	MDI1-
7	MDI1+	8	MDI0-
9	MDI0+	10	TCTG
11	V3_3M	12	LED_ACT#
13	LED_1000#	14	LED_100#

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USB Port

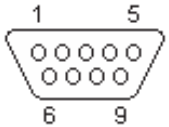
USB1 / USB2

Pin	Definition	Pin	Definition
1	VCC (VCC5)	2	DATA1-
3	DATA1+	4	GND
5	VCC (VCC5)	6	DATA-
7	DATA+	8	GND

RS232 Port

COM1 (J1) / COM2 (J2)

Standard DB9 Connector



Pin	Definition	Pin	Definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

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LED HDD/PWR

LED

T1

B1

LED No.	Function Description
T1	HDD LED (Red)
B1	Power LED (Green)

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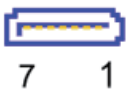
Internal Connectors Pin Definitions

This section provides descriptions, illustrations and pin definitions of the internal connectors.

Serial-ATA

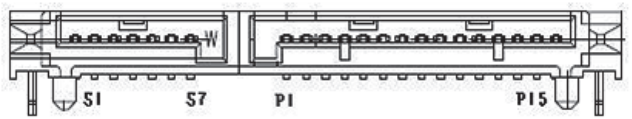
CN6



Pin	Definition	Pin	Definition
1	GND	2	SATA_TXP0 -
3	SATA_TXN0	4	GND
5	SATA_RXN0	6	SATA_RXP0
7	GND		

Serial-ATA

SATA1



Pin	Definition	Pin	Definition
S1	GND	S2	TX+
S3	TX-	S4	GND
S5	RX-	S6	RX+
S7	GND		
P1	NC	P2	NC
P3	NC	P4	GND
P5	GND	P6	GND
P7	VCC5	P8	VCC5
P9	VCC5	P10	GND
P11	NC	P12	GND
P13	NC	P14	NC
P15	NC		

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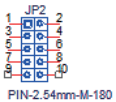
USB Connector

JP2



Pin	Definition	Pin	Definition
1	VCC (VCC5)	2	VCC (VCC5)
3	DATA-	4	DATA1-
5	DATA+	6	DATA1+
7	GND	8	GND

Serial-ATA DOM Power

J8

Pin	Definition	Pin	Definition
1	VCC5	2	GND

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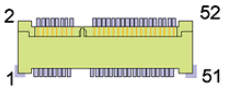
Mini-PCIe

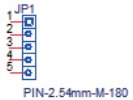
CN2 / CN3



Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition
1	WAKE#	2	+V3.3A_MIN	27	GND	28	+V1.5S_MIN
3	NC	4	GND	29	GND	30	SMB_CLK
5	NC	6	+V1.5S_MIN	31	PETn0	32	SMB_DATA
7	CLKREQ#	8	NC	33	PETp0	34	GND
9	GND	10	NC	35	GND	36	USB_D-
11	REFCLK-	12	NC	37	NC	38	USB_D+
13	REFCLK+	14	NC	39	+V3.3A_MIN	40	GND
15	GND	16	NC	41	+V3.3A_MIN	42	LED_WWAN#
17	NC	18	GND	43	NC	44	LED_WLAN#
19	NC	20	DISABLE#	45	NC	46	LED_WPAN#
21	GND	22	PERST#	47	NC	48	+V1.5S_MIN
23	PERn0	24	+V3.3A_MIN	49	NC	50	GND
25	PERp0	26	GND	51	NC	52	+V3.3A_MIN

IRDA Connector

JP1



Pin	Definition	Pin	Definition
1	VCC (VCC5)	2	CIRRX
3	IRRX	4	GND
5	IRTX		

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FAN Connector

FAN1 / FAN2

Pin	Definition	Pin	Definition
1	GND	2	+12V/Speed Control
3	FAN_TAC	4	FAN_CTL

Reset Connector

J6

Pin	Definition	Pin	Definition
1	RESET#	2	GND

CMOS Clear Select

JP6

Pin No.	Status	Function Description
1-2 (*)	Short	Normal
2-3	Short*	Clear BIOS

ME Clear Select

JP4

Pin No.	Status	Function Description
1-2 (*)	Short	Normal
2-3	Short*	Clear ME

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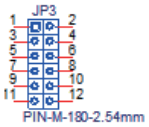
GPIO

JP3



Pin	Definition	Pin	Definition
1	GPI1	2	GPI2
3	GPI3	4	GPI4
5	GPO1	6	GPO2
7	GPO3	8	GPO4
9	VCC3	10	VCC3
11	GND	12	GND

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Chapter 3: System Setup

Removing the Chassis Cover

Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power source to prevent electric shock or system damage.

1. The screws on the bottom of cover are used to secure the cover to the chassis. Remove these screws and put them in a safe place for later use.

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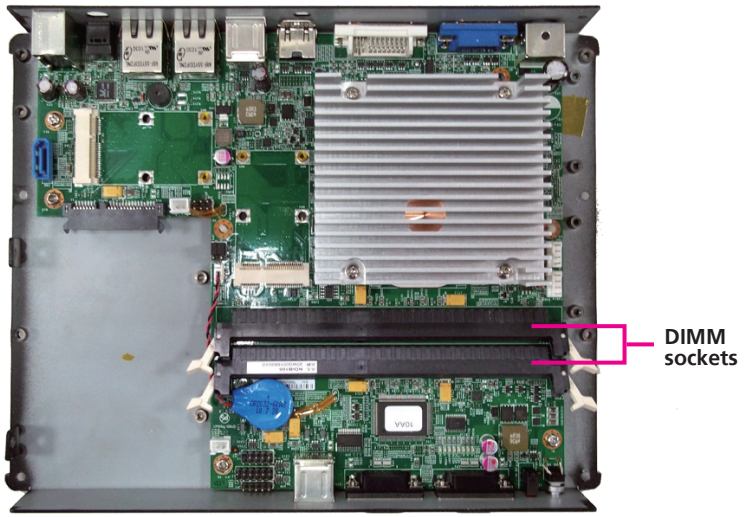
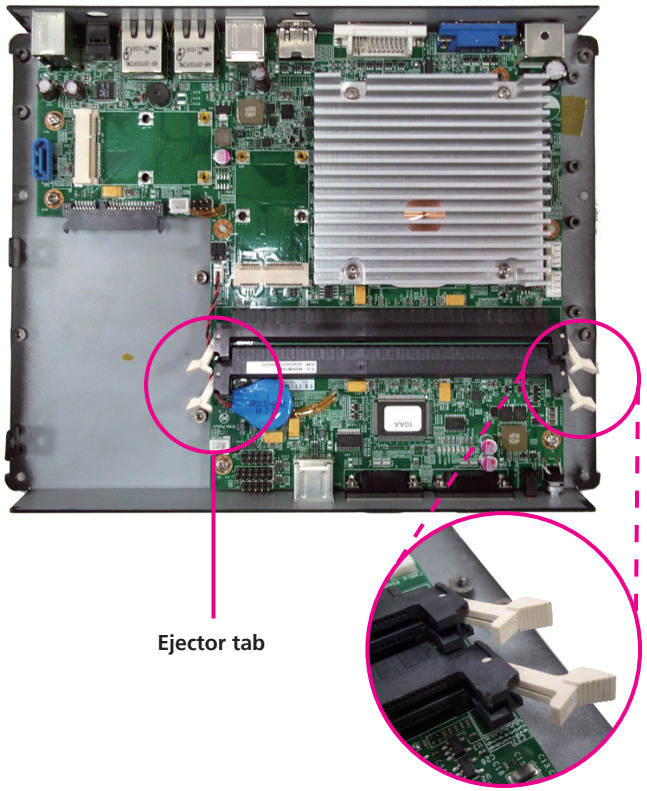
Installing a DIMM

1. Locate for the DIMM socket on the board.



2. Push the ejector tabs which are at the ends of the socket outward. This indicates that the socket is unlocked.



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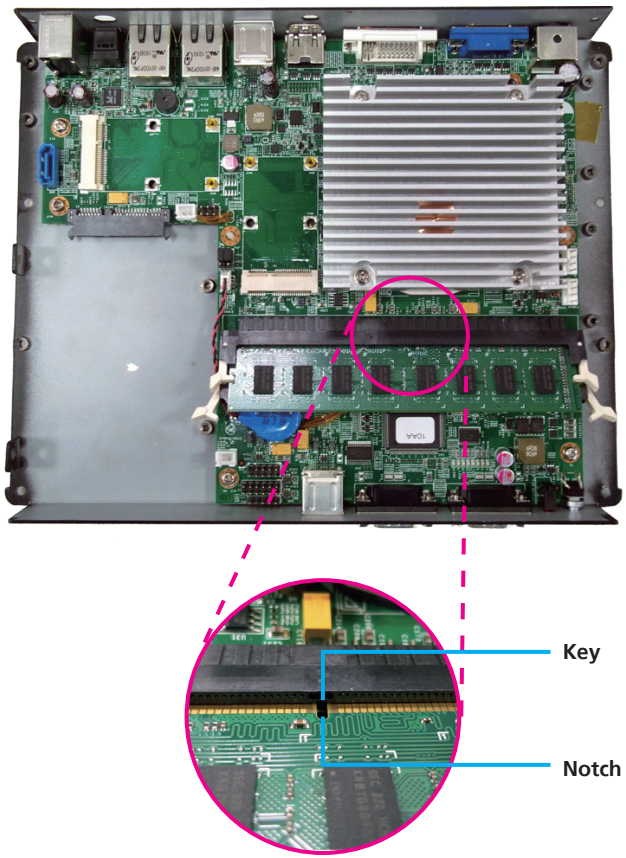
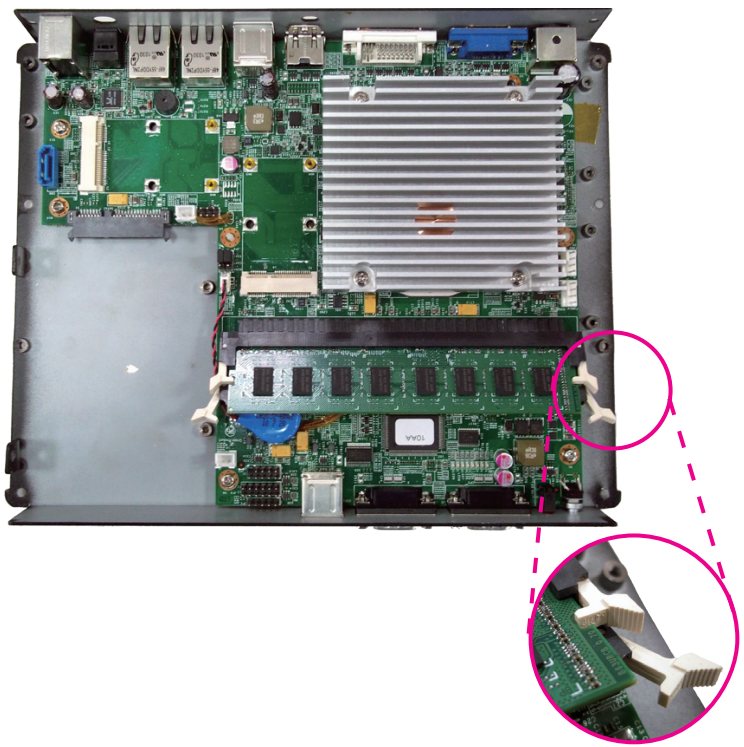
3. Note how the module is keyed to the socket. Grasping the module by its edges, align the module with the socket so that the "notch" on the module is aligned with the "key" on the socket. The key ensures the module can be plugged into the socket in only one direction.



4. Insert the module into the socket at an approximately 30 degrees angle. Apply firm even pressure to each end of the module until it slips down into the socket. The contact fingers on the edge of the module will almost completely disappear inside the socket.

   The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.



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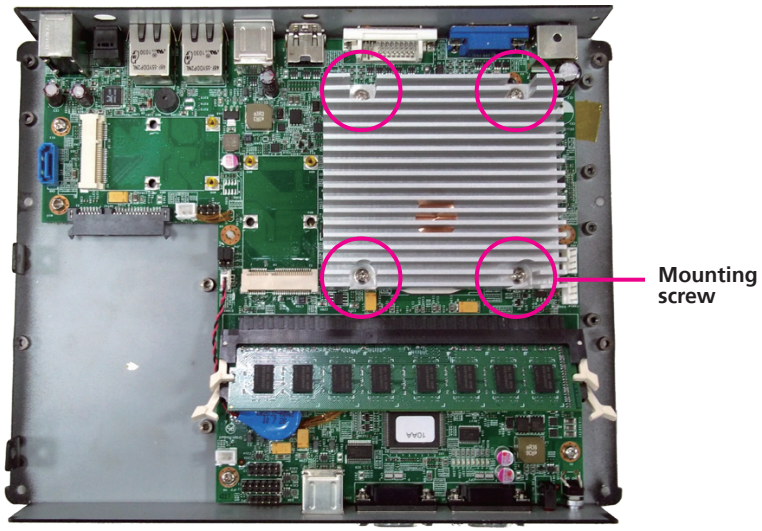
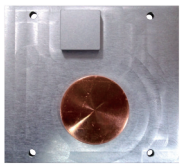
Installing the CPU

1. Loosen the mounting screws that secure the heat sink to the chassis.



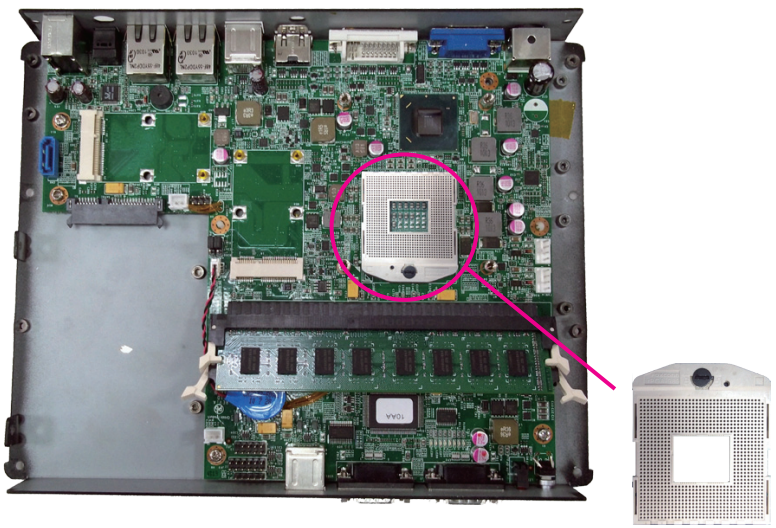
- Make sure all power cables are unplugged before you install the CPU.
- The CPU socket must not come in contact with anything other than the CPU. Avoid unnecessary exposure.

2. Now remove the heat sink to access the CPU socket.



Bottom Side of the Heat Sink

3. The CPU socket is readily accessible after you have removed the heatsink.



CPU socket

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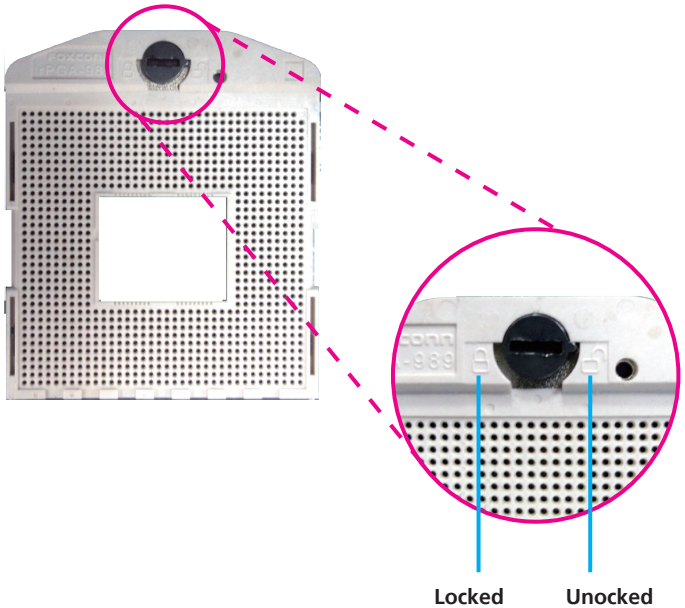
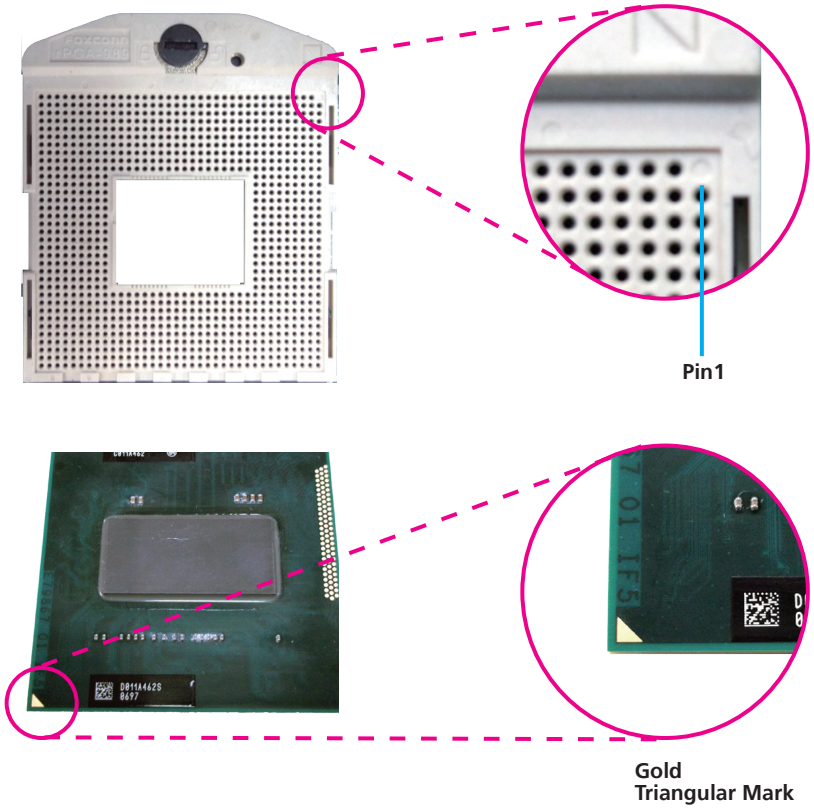
4. Use a screwdriver to turn the screw to its unlocked position.



5. Position the CPU above the socket. The gold triangular mark on the CPU must align with pin 1 of the CPU socket.



Handle the CPU by its edges and avoid touching the pins.

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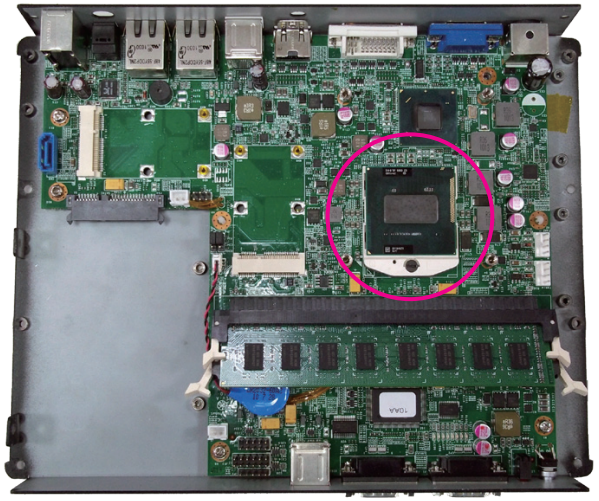
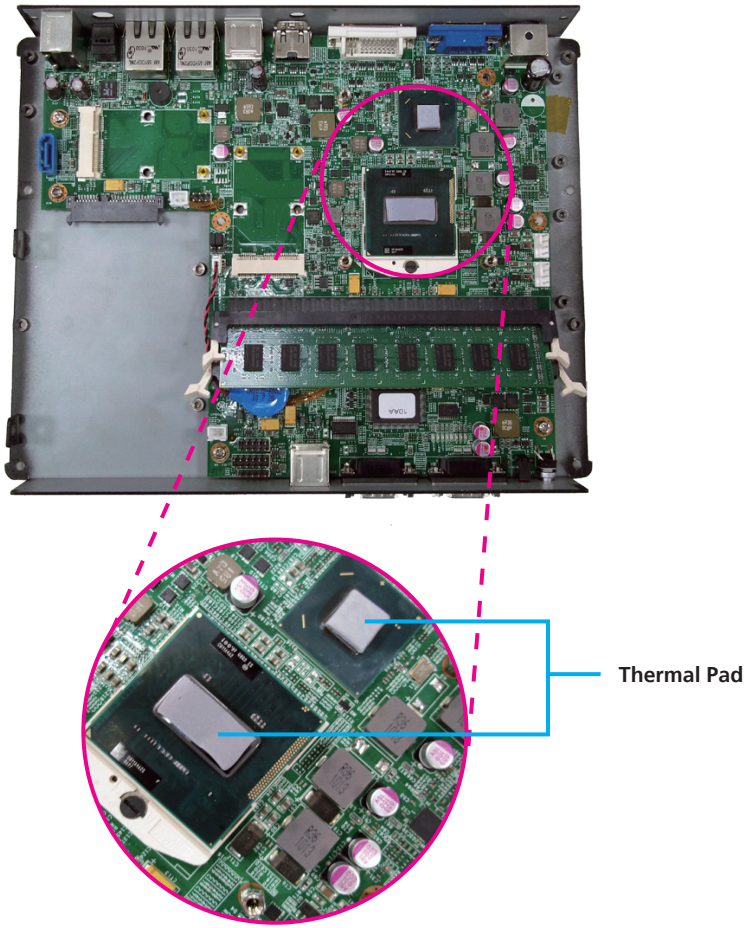
6. Insert the CPU into the socket until it is seated in place. The CPU will fitin only one orientation and can easily be inserted without exerting any force. Use a screwdriver to turn the screw to its locked position.



Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.

7. Attach the thermal pad onto the CPU.



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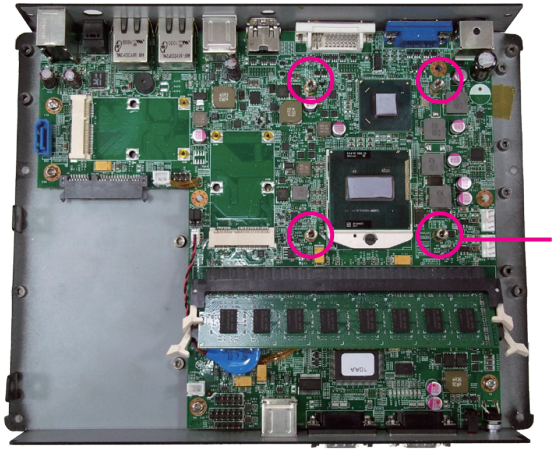
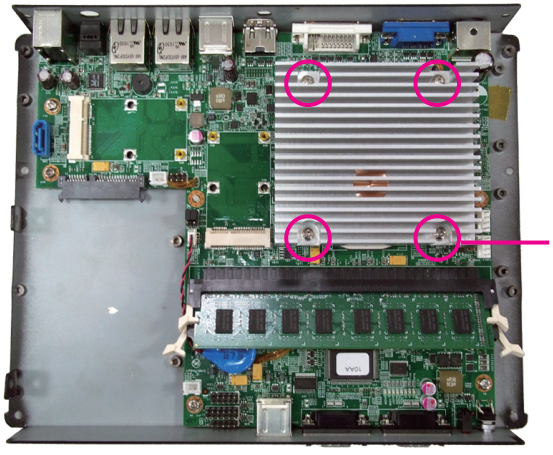
8. Align the mounting screws of the heat sink with the mounting holes on the board then tighten the screws to secure the heat sink in place.





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Installing a SATA Hard Drive

1. The drive bracket included in the package is used to hold a SATA hard drive.

2. Place the SATA hard drive onto the drive bracket. Align the mounting holes that are on the sides of the SATA drive with the mounting holes on the drive bracket.

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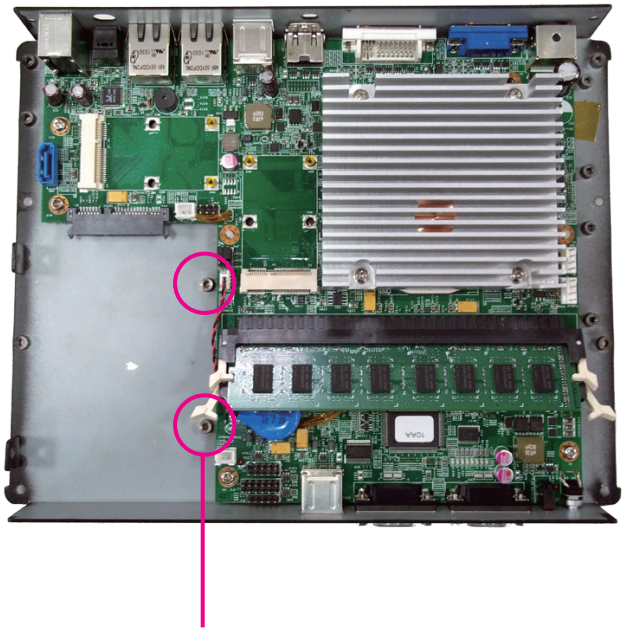
3. Use the provided screws to secure the SATA drive in place.

Mounting Screw

4. Secure the SATA Drive with the provided mounting screw.



Mounting Studs

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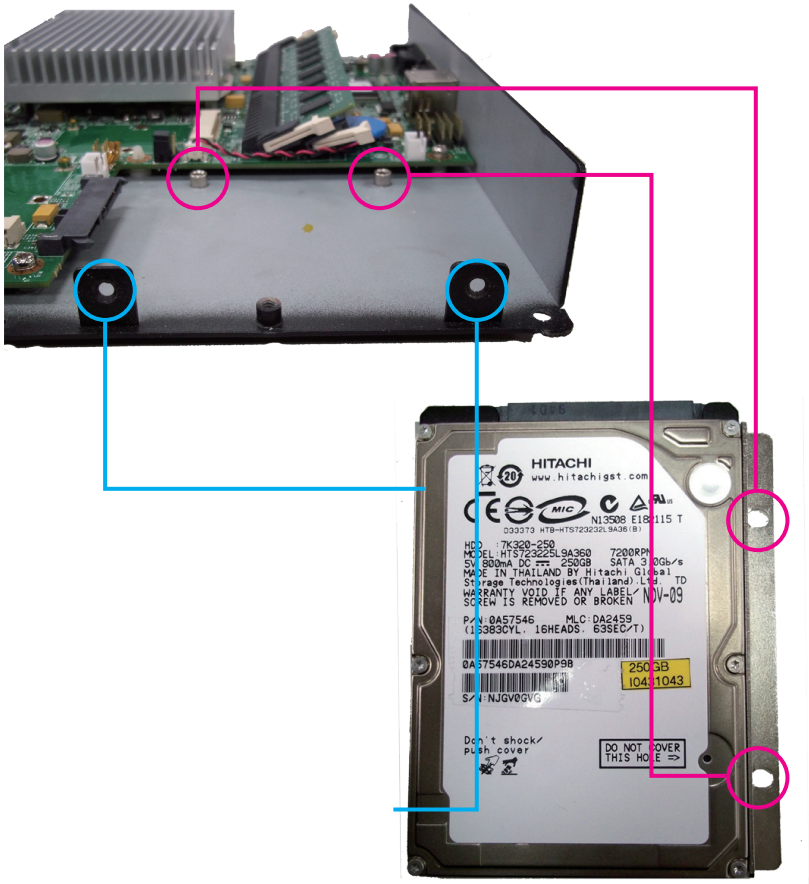
5. The mounting holes on the drive bracket and chassis are used to secure hard drive to the chassis.



6. Locate for the SATA connector and the SATA power connector on the SATA drive.

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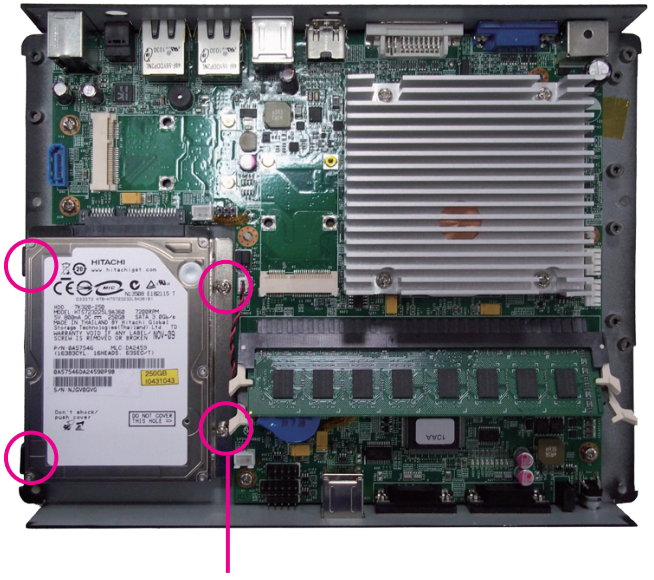
7. Align the mounting holes of the drive bracket with the mounting studs on the board then use the provided mounting screws to secure the hard drive in place.



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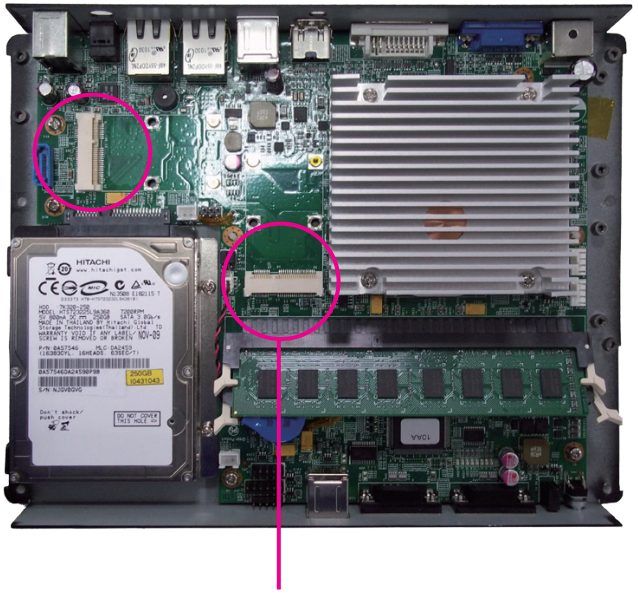
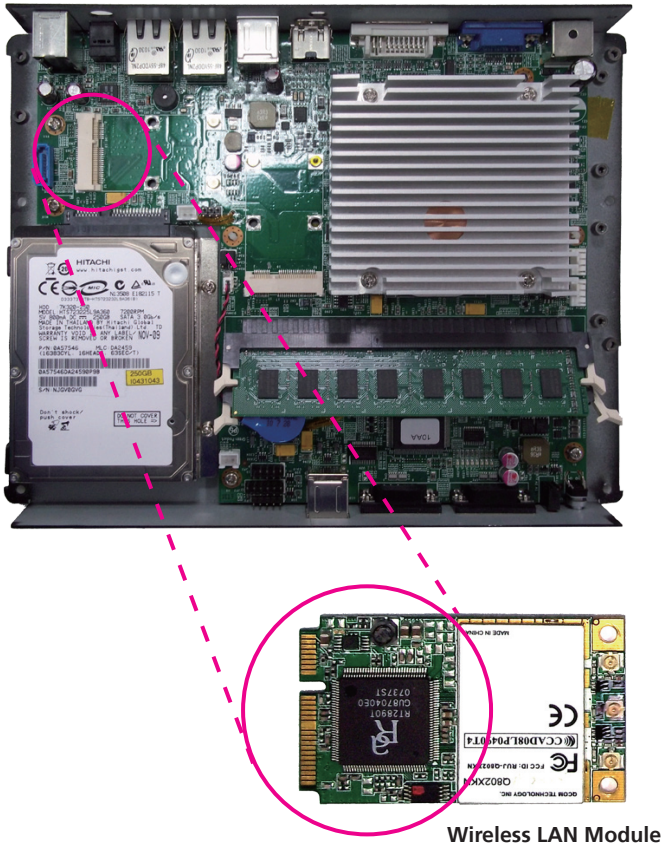
Installing a Wireless LAN Module

1. Locate for the Mini PCI Express slot on the board.



Mini PCI Express Slot

2. Insert the wireless LAN module into the Mini PCI Express slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



Wireless LAN Module

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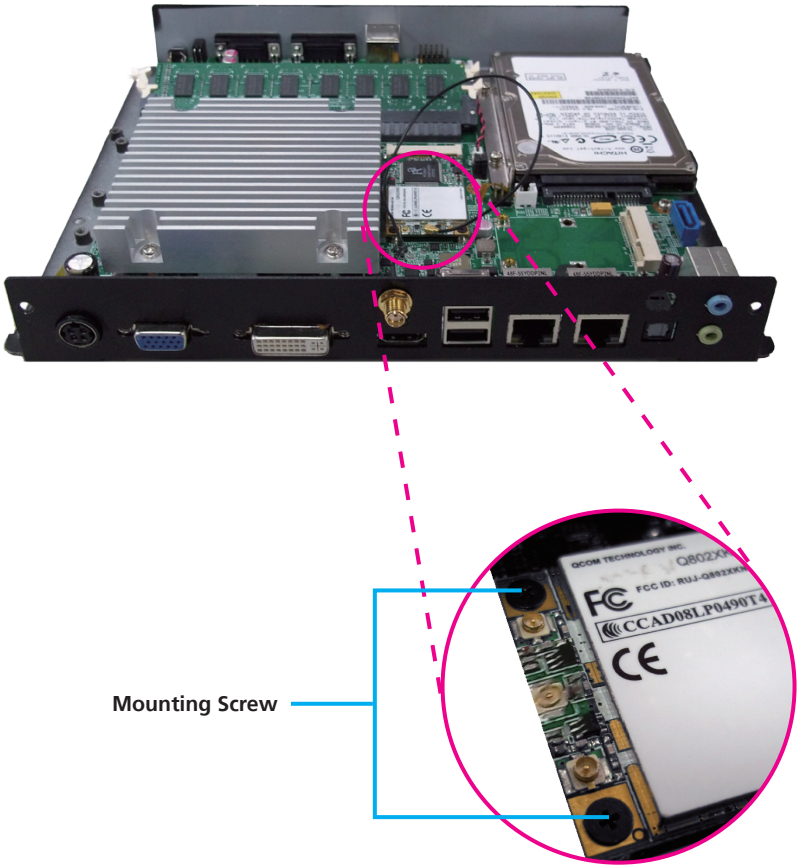
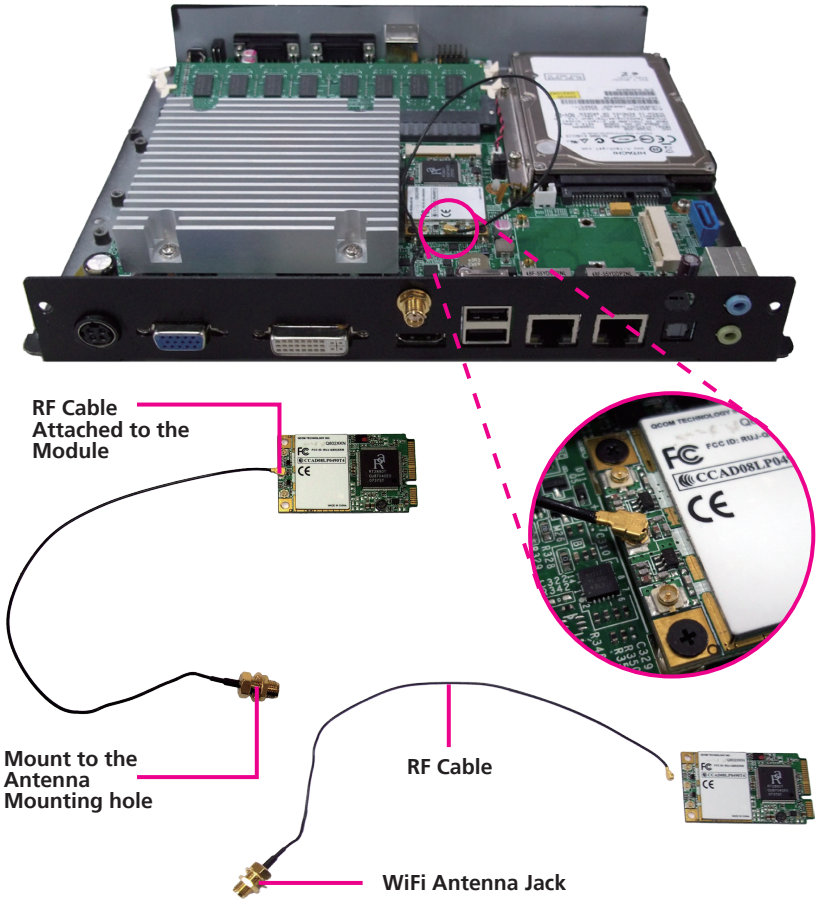
3. Push the module down then secure it with mounting screws.



4. Attach one end of the RF cable onto the WiFi module.



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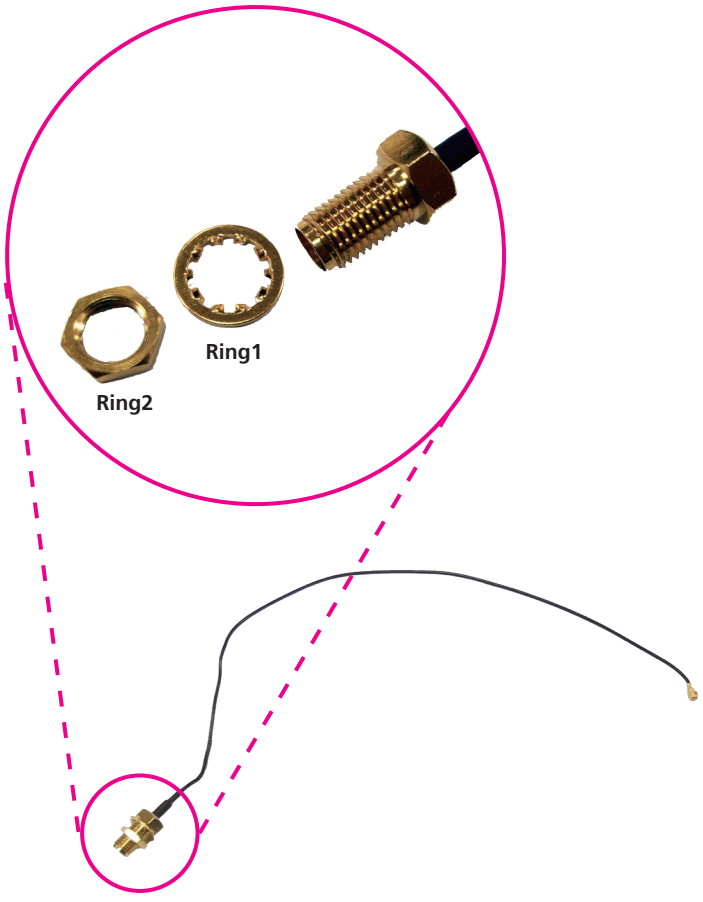
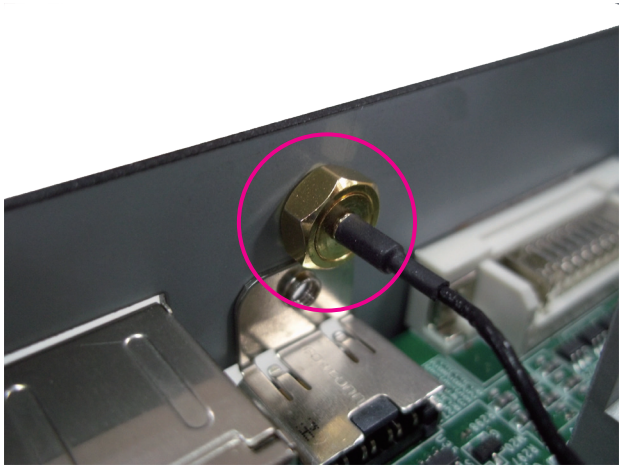
5. Insert the 2 rings (ring 1 then ring 2) into the WiFi antenna jack.



6. Now mount the WiFi antenna jack to the WiFi antenna hole located at the rear panel of the chassis then tighten the rings.



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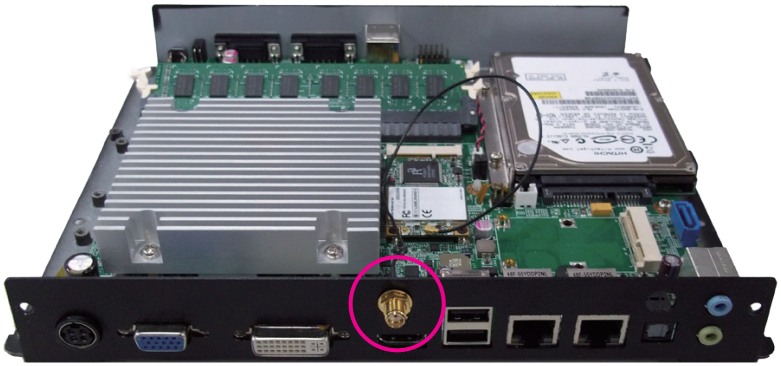
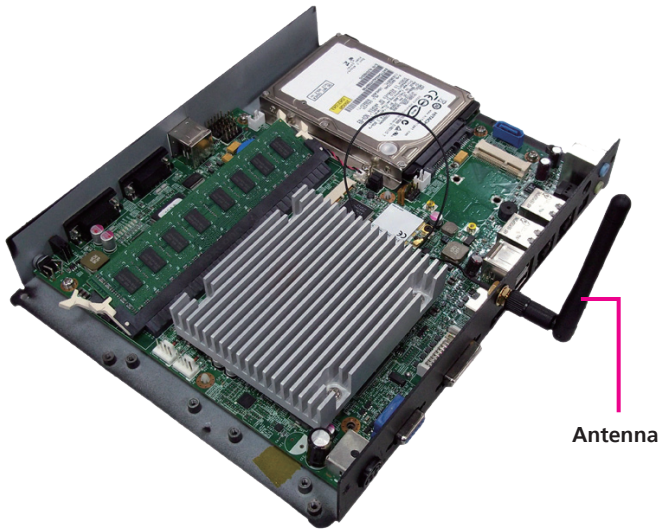
7. The photo below shows the WiFi antenna jack attached at the rear panel of the chassis.



8. Now connect an external antenna to the WiFi antenna jack.



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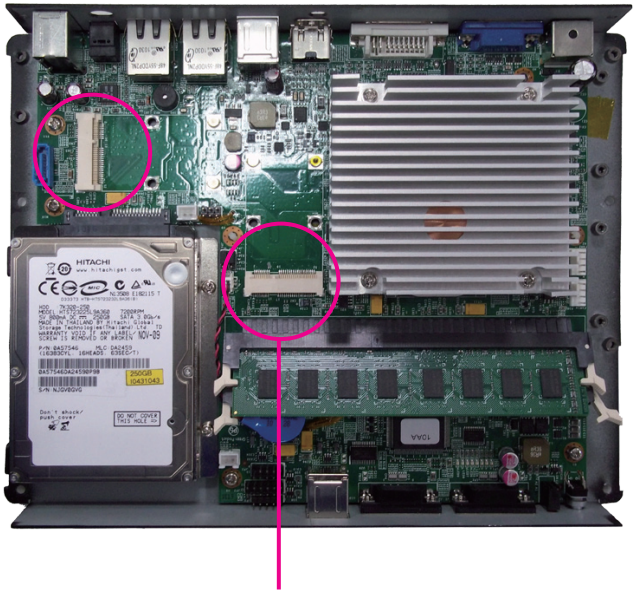
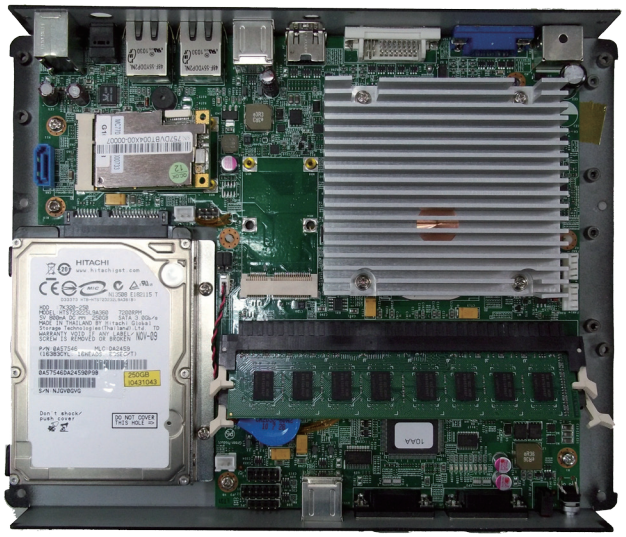
Installing a TV Tuner Module

1. Locate for the Mini PCI Express slot on the board.



Mini PCI Express Slot

2. Insert the TV Tuner module into the Mini PCI Express slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



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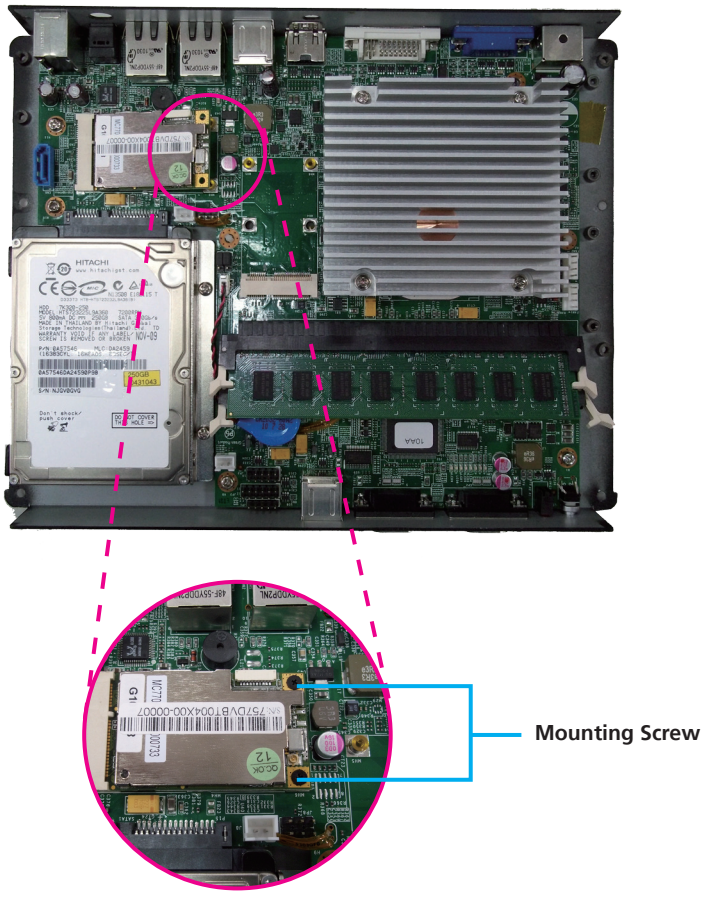
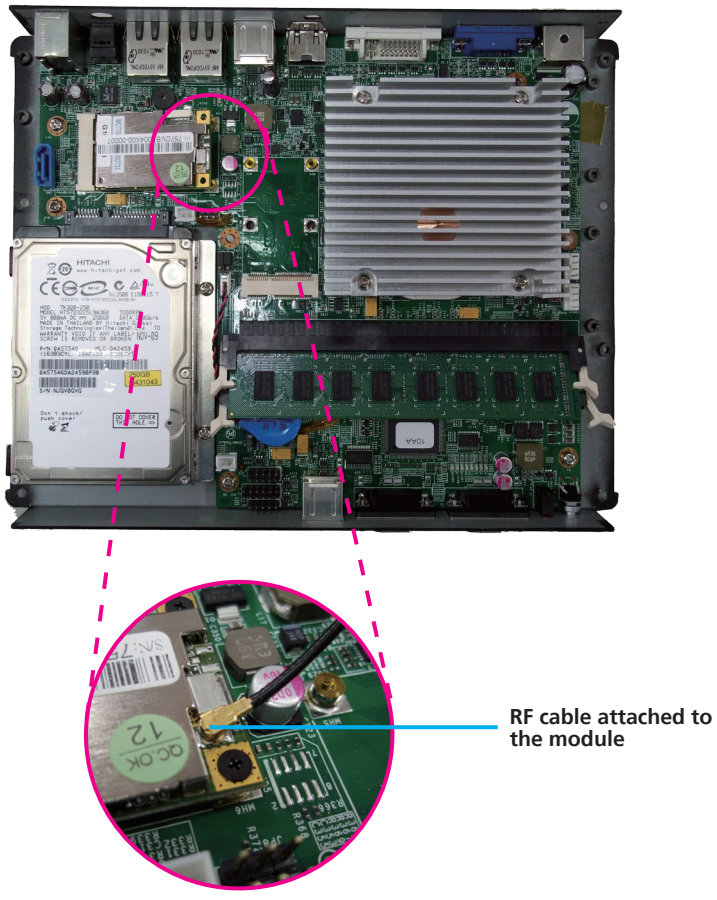
3. Push the module down then secure it with mounting screws.



4. Attach one end of the RF cable onto the module.



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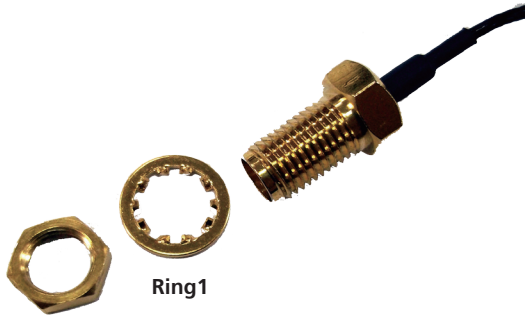
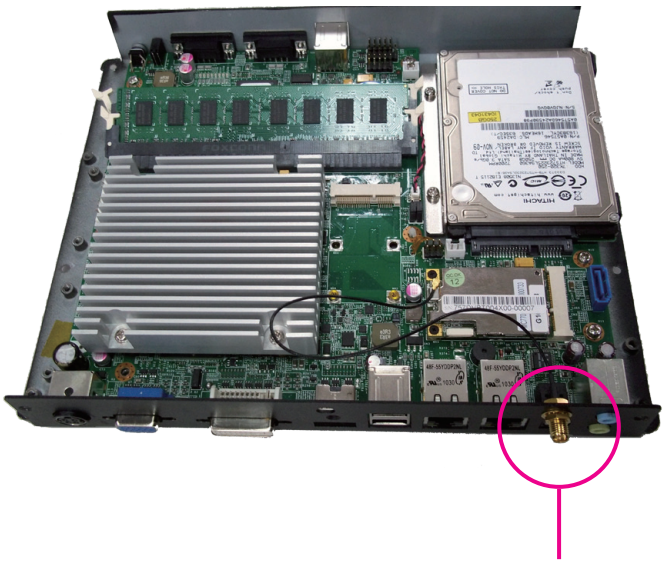
5. Insert the 2 rings (ring 1 then ring 2) into the TV antenna jack.



6. Now mount the TV antenna jack to the TV antenna hole located at the front panel of the chassis then tighten the rings.



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7. Connect an external TV antenna to the TV antenna jack.

TV Antenna Jack

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Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for NDiS 166 Series. The BIOS screens in this chapter are for reference only and may change if the BIOS is updated in the future. To check for the latest updates and revisions, visit the NEXCOM Web site at www.nexcom.com.tw.

About BIOS Setup

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters.

These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:

- Hard drives, diskette drives, and peripherals.
- Video display type and display options.
- Password protection from unauthorized use.
- Power management features.

The settings made in the setup program intimately affect how the computer performs. It is important, therefore, first to try to understand all the Setup options, and second, to make settings appropriate for the way you use the computer.

When to Configure the BIOS

This program should be executed under the following conditions:

- When changing the system configuration.
- When a configuration error is detected by the system and you are
- prompted to make changes to the Setup program
- When resetting the system clock.
- When redefining the communication ports to prevent any conflicts.
- When making changes to the Power Management configuration.
- When changing the password or making other changes to the security setup.

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

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Default Configuration

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

If the error occurs before the display device is initialized, a series of beeps will be transmitted.

If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing <Del> allows you to enter Setup. Another way to enter Setup is to power on the computer and wait for the following message during the POST:

TO ENTER SETUP BEFORE BOOT

PRESS <CTRL-ALT-ESC>

Press the <Del>or<F2> key to enter Setup

Legends

Key	Function
Right and Left arrows	Moves the highlight left or right to select a menu.
Up and Down arrows	Moves the highlight up or down between sub-menus or fields.
<Esc>	Exits to the BIOS Setup Utility.
+ (plus key)	Scrolls forward through the values or options of the highlighted field.
- (minus key)	Scrolls backward through the values or options of the highlighted field.
<F1>	Displays General Help.
<F2>	Previous Value
<F3>	Load optimized default setting
<F4>	Saves and exits the Setup program.
<Enter>	Press <Enter> to enter the highlighted submenu.

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Scroll Bar

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

Submenu

When " ▸ " appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>

BIOS Setup Utility

Once you enter the AMI BIOS Setup Utility, the Main Menu will appear on the screen. The main menu allows you to select from six setup functions and one exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the submenu.

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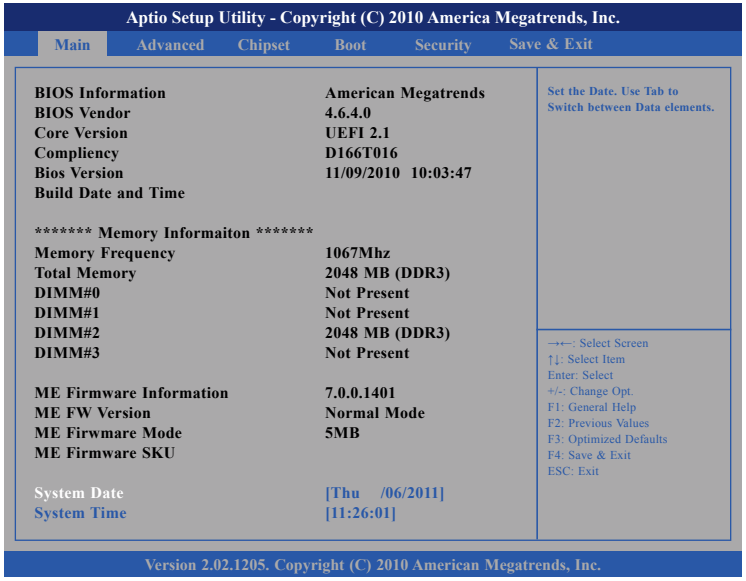
Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.



BIOS Information

Displays the detected BIOS information.

Memory Information

Displays the detected system memory information.

ME Firmware Information

Displays the detected ME Firmware information.

System Date

The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 to 2099.

System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

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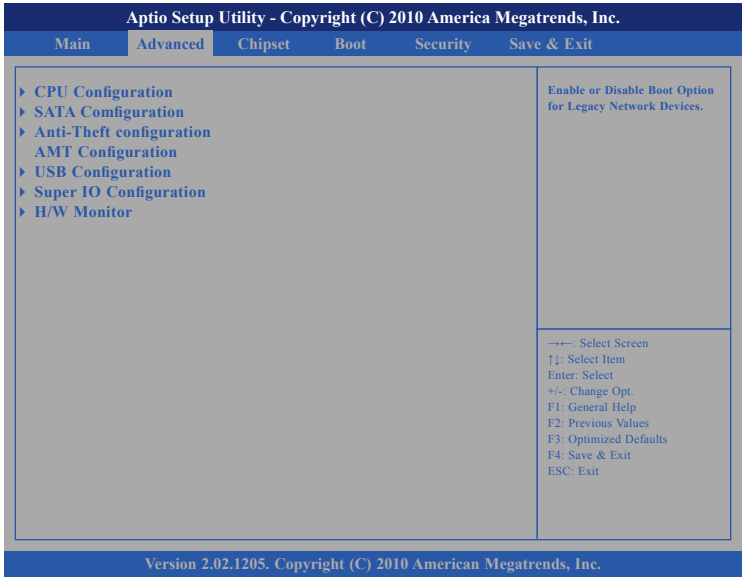
Advanced

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

Setting incorrect field values may cause the system to malfunction.



CPU Configuration

This section is used to configure the CPU. It will also display detected CPU information.

SATA Configuration

This section is used to configure the SATA drives.

Thermal Configuration

Configures the intelligent power sharing function.

Anti-Thefts Configuration

Configures the Intel® Anti-Theft Technology function.

AMT Configuration

Configures the AMT function.

USB Configuration

Configures the USB devices.

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Super IO Configuration

This section is used to configure the I/O functions supported by the on-board Super I/O chip.

H/W Monitor

This section is used to configure the hardware monitoring events such as temperature, fan speed and voltages.

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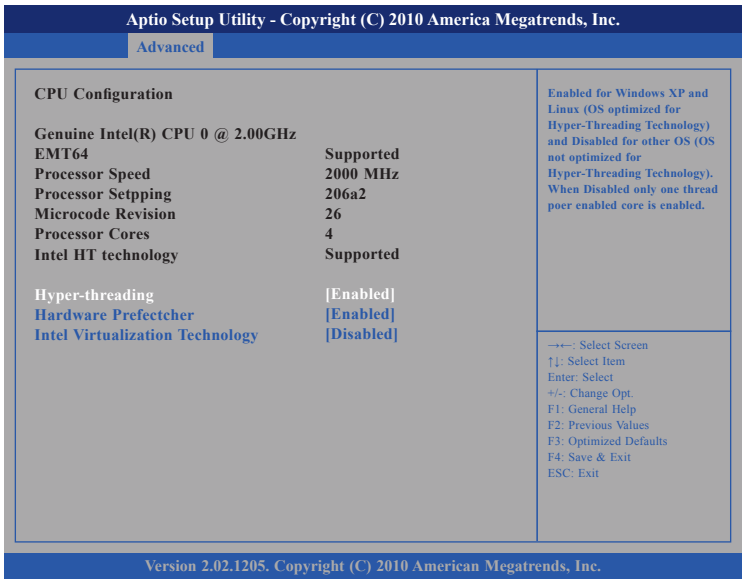
CPU Configuration

This section is used to configure the CPU. It will also display detected CPU information.


Aptio Setup Utility - Copyright (C) 2010 America Megatrends, Inc.
Advanced
CPU Configuration
Genuine Intel(R) CPU 0 @ 2.00GHz
EMT64 Supported
Processor Speed 2000 MHz
Processor Setpping 206a2
Microcode Revision 26
Processor Cores 4
Intel HT technology Supported
Hyper-threading [Enabled]
Hardware Prefectcher [Enabled]
Intel Virtualization Technology [Disabled]
Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread poer enabled core is enabled.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Hyper-Threading

Enable this field for Windows XP and Linux which are optimized for Hyper-Threading technology. Select disabled for other OSes not optimized for Hyper-Threading technology. When disabled, only one thread per enabled core is enabled.

Hardware Prefetcher

Turns on or off the MLC streamer prefetcher.

Intel Virtualization Technology

When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

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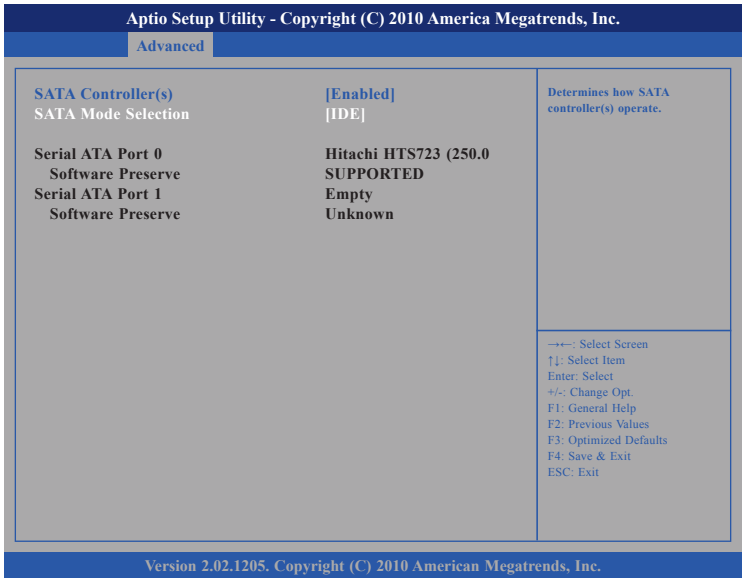
SATA Configuration

This section is used to configure the SATA drives.



SATA Mode

IDE Mode

This option configures the Serial ATA drives as Parallel ATA storage devices.

AHCI Mode

This option allows the Serial ATA devices to use AHCI (Advanced Host Controller Interface).

RAID Mode

This option allows you to create RAID or Intel Matrix Storage configuration on Serial ATA devices.

Please set SATA Mode to **IDE Mode** before installing Windows XP. Setting AHCI mode could not initial Windows XP installation.

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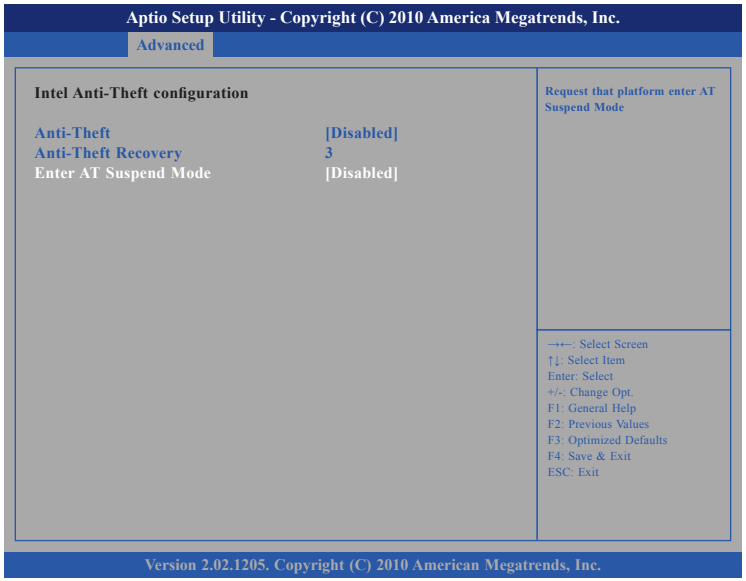
Anti-Thefts Configuration

Configures the Intel® Anti-Theft Technology function.



Anti-Theft

Enables or disables Intel® Anti-Theft Technology function in BIOS.

Enter AT Suspend Mode

Enables or disables the request that platform enter AT suspend mode.

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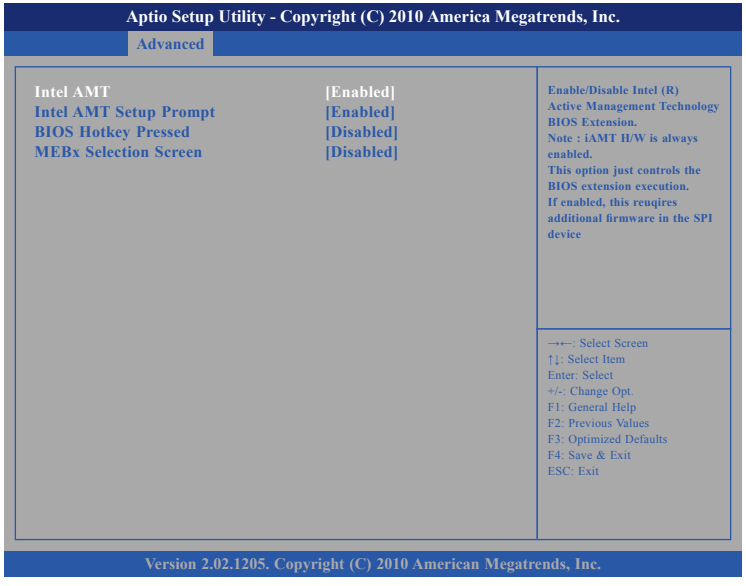
AMT Configuration

This section is used to configure the AMT function.


Aptio Setup Utility - Copyright (C) 2010 America Megatrends, Inc.
Advanced
Intel AMT [Enabled]
Intel AMT Setup Prompt [Enabled]
BIOS Hotkey Pressed [Disabled]
MEBx Selection Screen [Disabled]
Enable/Disable Intel (R) Active Management Technology BIOS Extension.
Note : iAMT H/W is always enabled.
This option just controls the BIOS extension execution.
If enabled, this reuqires additional firmware in the SPI device
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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Intel AMT

Enables or disables the Intel® Active Management Technology BIOS Extension function.

Intel AMT Setup Prompt

Enables or disables Intel AMT Setup prompt to wait for hot-key to enter setup.

BIOS Hokey Pressed

Enables or disables BIOS hotkey press.

MEBx Selection Screen

Enables or disables MEBx selection screen

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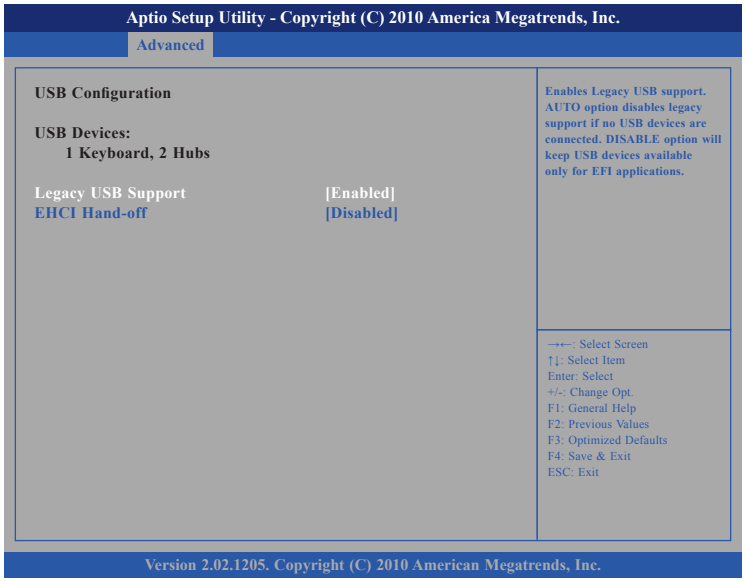
USB Configuration

This section is used to configure USB devices.


Aptio Setup Utility - Copyright (C) 2010 America Megatrends, Inc.
Advanced
USB Configuration
USB Devices:
1 Keyboard, 2 Hubs
Legacy USB Support [Enabled]
EHCI Hand-off [Disabled]
Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

Legacy USB Support

Enabled - Enables legacy USB.

Auto - Disables support for legacy when no USB devices are connected.

Disabled - Keeps USB devices available only for EFI applications.

EHCI Hand-off

This is a workaround for OSes that does not support EHCI hand-off. The EHCI ownership change should be claimed by the EHCI driver.

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Super IO Configuration

This section is used to configure the I/O functions supported by the on-board Super I/O chip.

Serial Port 0 Configuration to Serial Port 1 Configuration

Selects the IO/IRQ setting of the I/O devices.

Parallel Port Configuration

Configures the parallel port.

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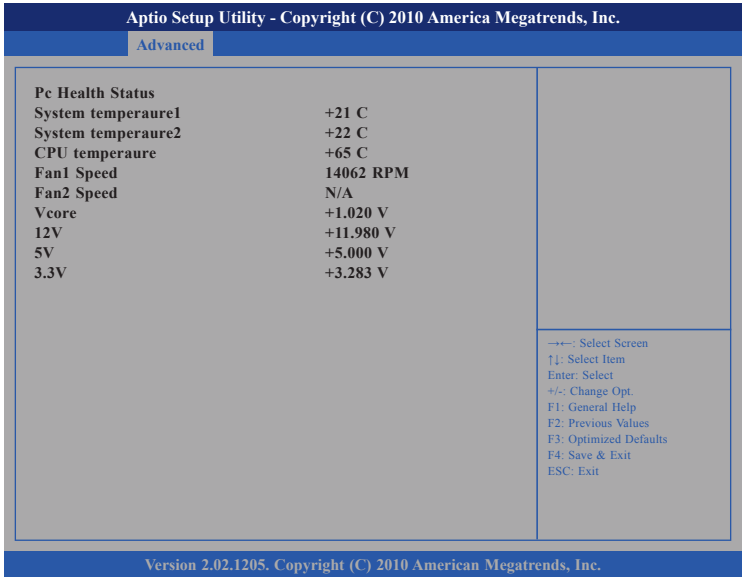
H/W Monitor

This section is used to configure the hardware monitoring events such as temperature, fan speed and voltages.



System Temperature 1 to System Temperature 3

Detects and displays the internal temperature of the system.

Fan1 Speed to Fan2 Speed

Detects and displays the current system fan and CPU fan speed in RPM (Revolutions Per Minute).

Vcore to 3.3V

Detects and displays the output voltages.

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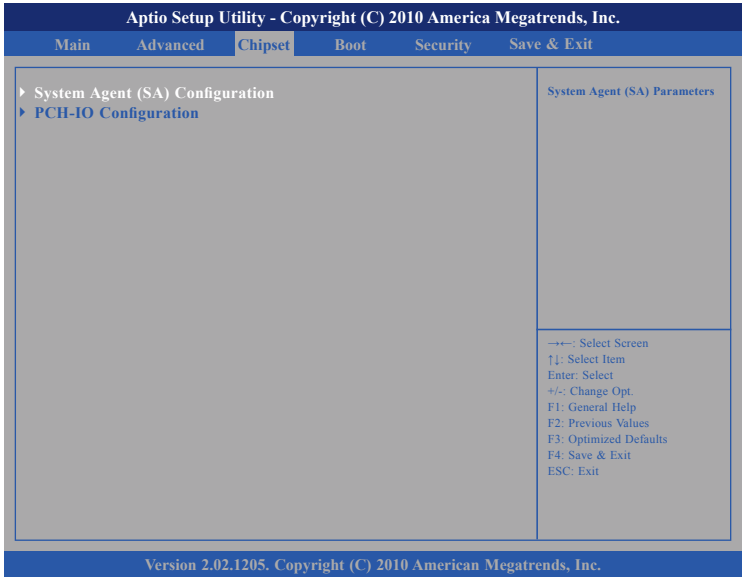
Chipset



System Agent (SA) Configuration

System Agent (SA) Parameters

PCH-IO Configuration

PCH-IO parameters

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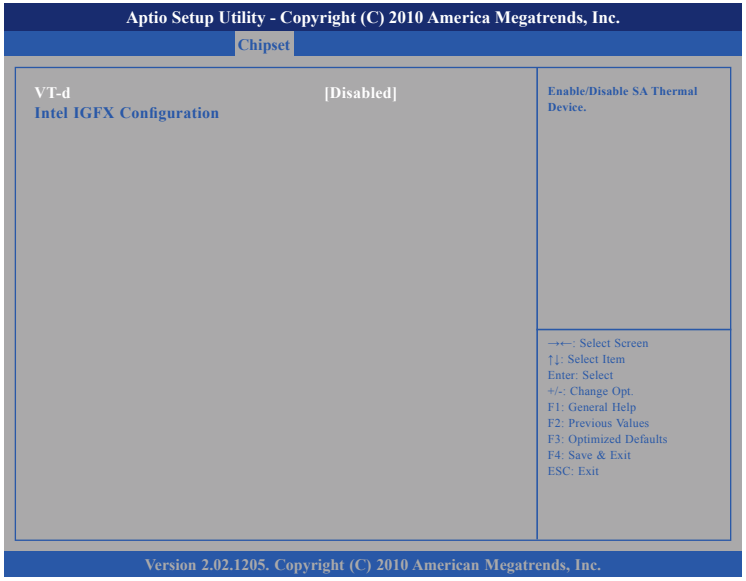
System Agent (SA) Configuration

This section is used to configure the System Agent (SA) Configuration function.



Thermal Device

Check to enable VT-d function on MCH.

Intel IGFX Configuration

Selects the Graphic chip setting of Intel IGFX Configuration.

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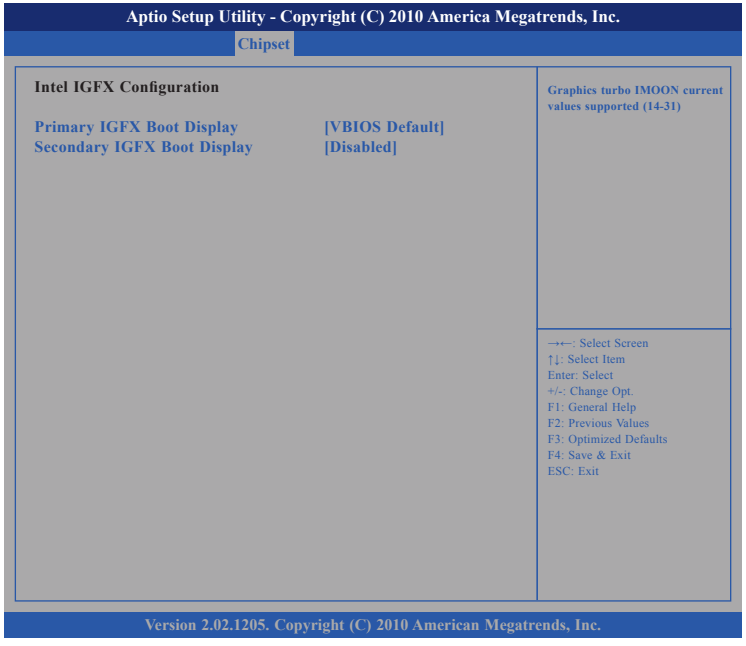
INTEL IGFX Configuration

This section is used to configure the Intel IGFX Configuration.


Aptio Setup Utility - Copyright (C) 2010 America Megatrends, Inc.
Chipset
Intel IGFX Configuration
Primary IGFX Boot Display [VBIOS Default]
Secondary IGFX Boot Display [Disabled]
Graphics turbo IMOON current values supported (14-31)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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Primary IGFX Boot Display

Select the vedio devoce which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primery display.

Secondary IGFX Boot Display

Select secondary display device.

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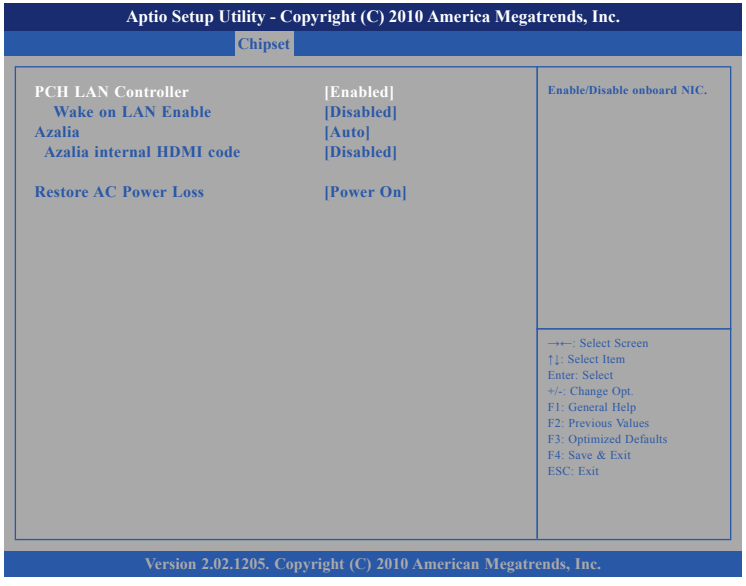
PCH-IO Configuration

This section is used to configure the PCH-IO Configuration.



PCH LAN Controller

Enables or disables onboard NIC.

Wake on LAN Enable

Enables or disables integrated LAN to wake the system.

Azalia

Control Detection of the Azalia device.

Disabled - Azalia will be unconditionally disabled.

Enabled - Azalia will be unconditionally disabled.

Auto - Azalia will be enabled if present, disabled otherwise.

Azalia internal HDMI codec

Enables or disables internal HDMI codec for Azalia.

Restore AC Power Loss

Select AC power state when power is re-applied after a power failure.

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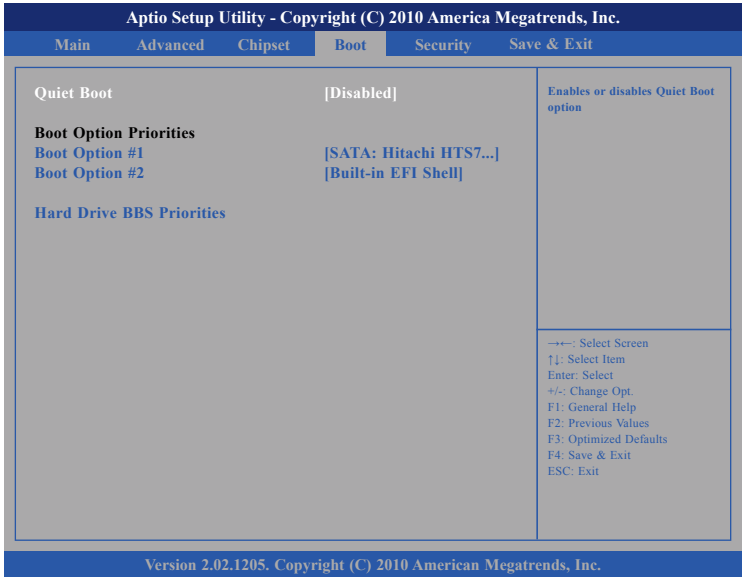
Boot



Quiet Boot

Enables or disables the quiet boot function.

Boot Option #1 and Boot Option #2

Selects the boot sequence of the hard drives.

Hard Drive BBS Priorities

Sets the order of the legacy devices in this group.

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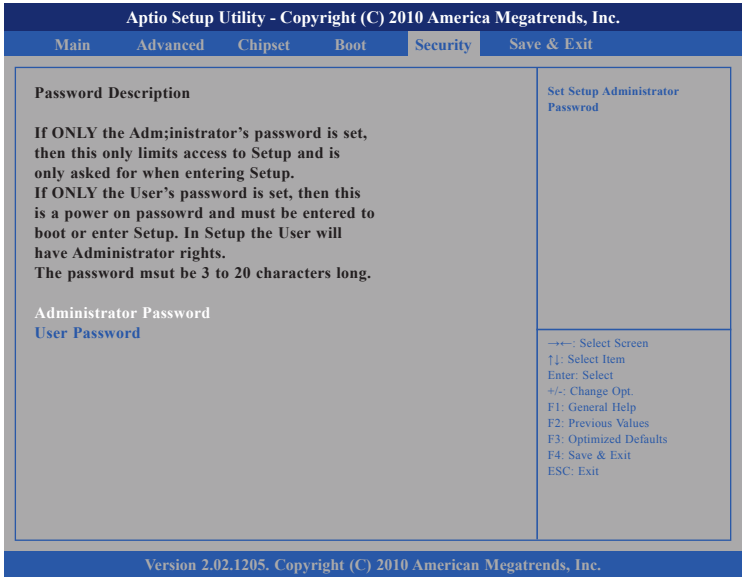
Security


Aptio Setup Utility - Copyright (C) 2010 America Megatrends, Inc.
Main
Advanced
Chipset
Boot
Security
Save & Exit
Password Description
If ONLY the Adm;inistrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on passowrd and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password msut be 3 to 20 characters long.
Administrator Password
User Password
Set Setup Administrator Passwrod
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
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Administrator Password

Sets the administrator password.

User Password

Sets the user password.

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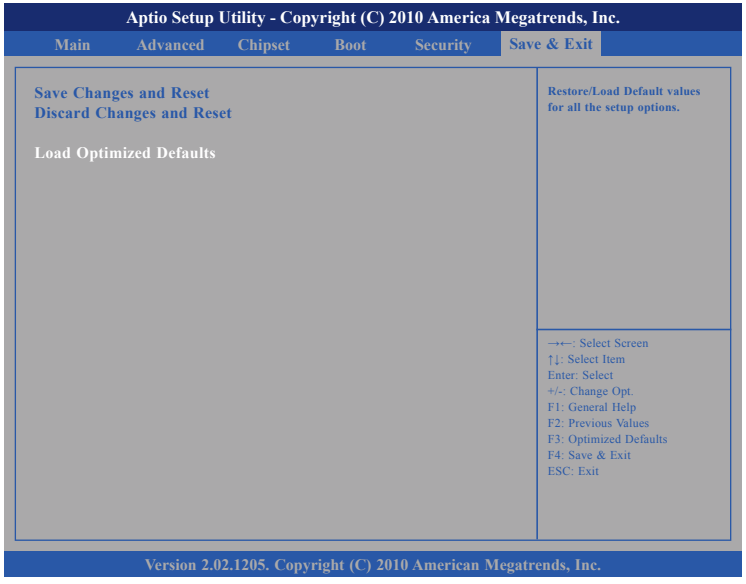
Save & Exit



Save Changes and Exit

To save the changes and exit the Setup utility, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes. You can also press <F4> to save and exit Setup.

Discard Changes and Exit

To exit the Setup utility without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting. You can also press <ESC> to exit without saving the changes.

Load Optimized Default

To restore / lead default all values for all the setup options. Confirm by selecting Yes to apply optimized default settings.

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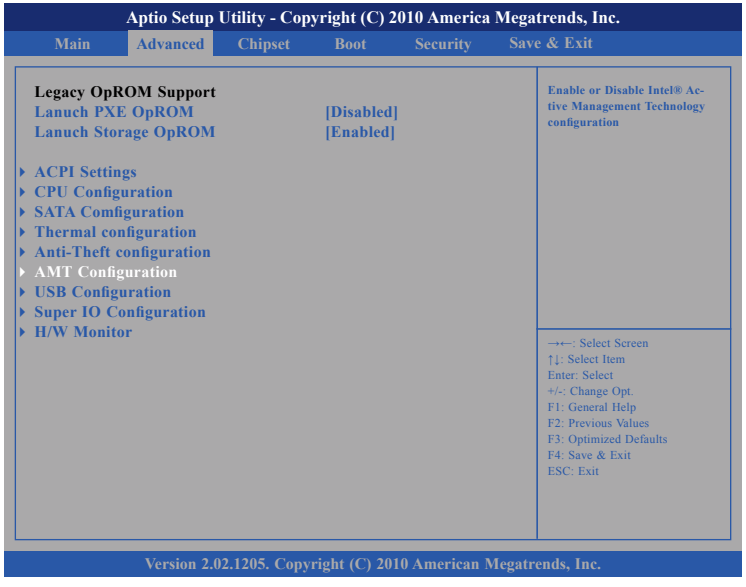
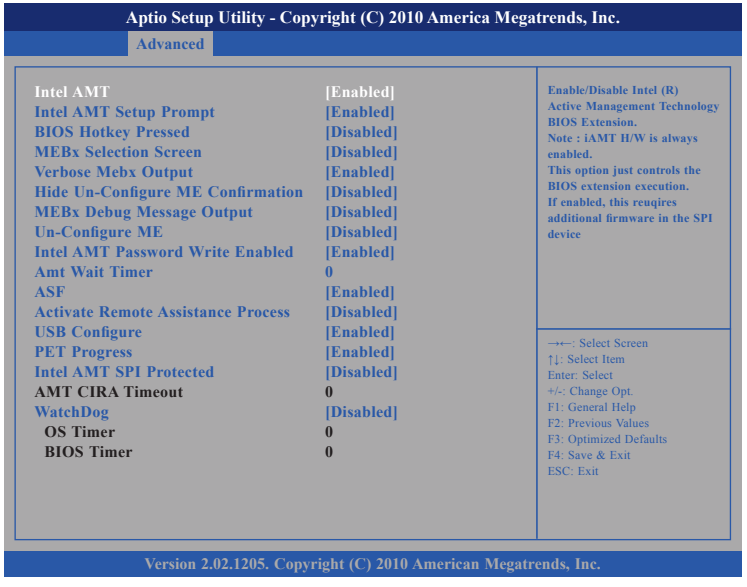
Chapter 5: AMT Settings

Enable Intel® AMT in the AMI BIOS

1. In the Advanced menu, select **AMT Configuration**.



2. In the **AMT** field, select Enabled.


Aptio Setup Utility - Copyright (C) 2010 America Megatrends, Inc.
Advanced
Intel AMT [Enabled]
Intel AMT Setup Prompt [Enabled]
BIOS Hotkey Pressed [Disabled]
MEBx Selection Screen [Disabled]
Verbose Mebx Output [Enabled]
Hide Un-Configure ME Confirmation [Disabled]
MEBx Debug Message Output [Disabled]
Un-Configure ME [Disabled]
Intel AMT Password Write Enabled [Enabled]
Amt Wait Timer 0
ASF [Enabled]
Activate Remote Assistance Process [Disabled]
USB Configure [Enabled]
PET Progress [Enabled]
Intel AMT SPI Protected [Disabled]
AMT CIRA Timeout 0
WatchDog [Disabled]
OS Timer 0
BIOS Timer 0
Enable/Disable Intel (R) Active Management Technology BIOS Extension.
Note : iAMT H/W is always enabled.
This option just controls the BIOS extension execution.
If enabled, this reuqires additional firmware in the SPI device
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.02.1205. Copyright (C) 2010 American Megatrends, Inc.

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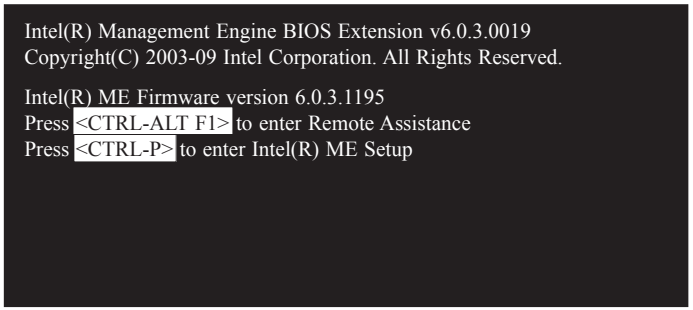
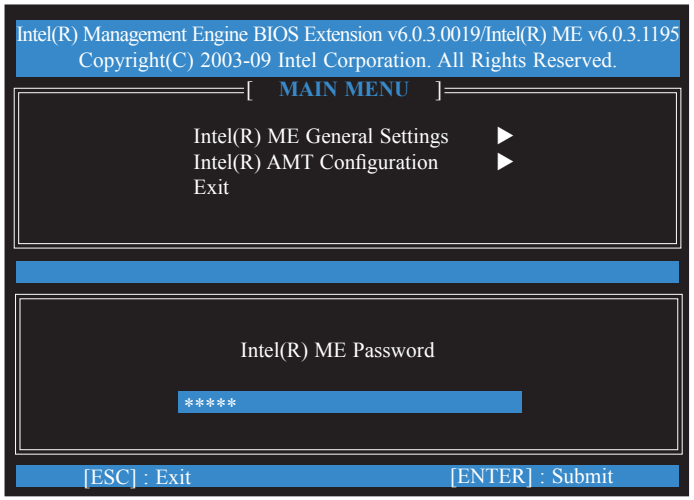
Configure the Intel® ME Setup

1. When the system reboots, the following message will be displayed. Press **<Ctrl-P>** as soon as the message is displayed; as this message will be displayed for only a few seconds.


Intel(R) Management Engine BIOS Extension v6.0.3.0019
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
Intel(R) ME Firmware version 6.0.3.1195
Press <CTRL-ALT F1> to enter Remote Assistance
Press <CTRL-P> to enter Intel(R) ME Setup

2. You will be prompted for a password. The default password is "admin". Enter the default password in the space provided under Intel(R) ME Password and then press Enter.



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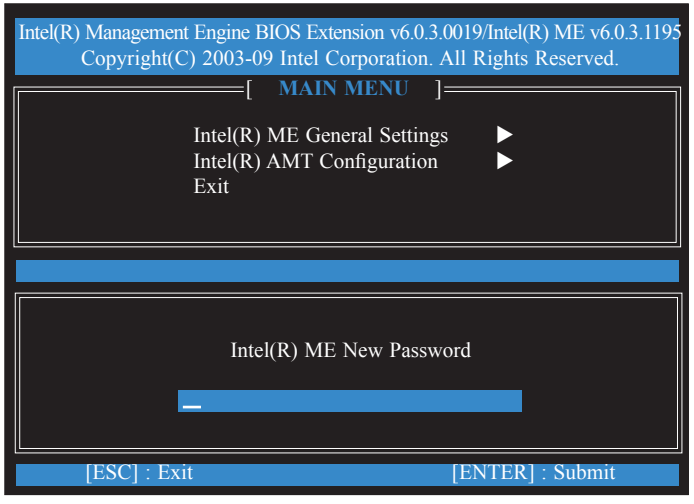
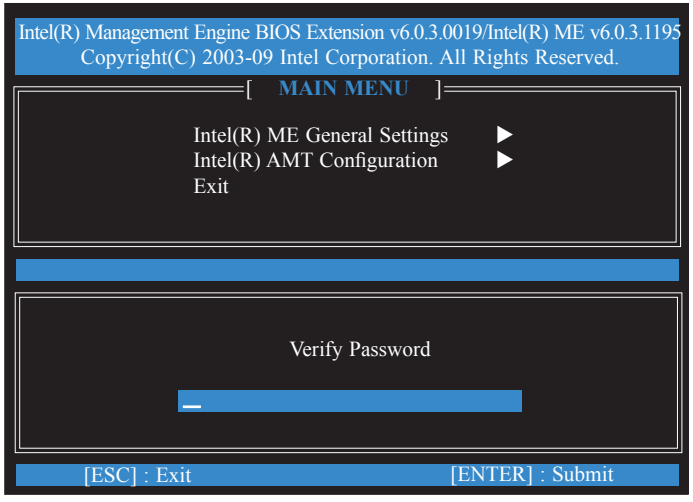
3. Enter a new password in the space provided under Intel(R) ME New Password and then press Enter. The new password must be based on the following rules to create a strong password security.
   - Password length - at least 8 characters and not longer than 32.
   - Password complexity - the password must include the following.
     - At least one digit character (0, 1, ...9)
     - At least one 7-bit ASCII non alpha-numeric character (e.g. !, $, ;) but excluding : , and " characters
     - At least one lowercase letter ('a', 'b'...'z') and at least one uppercase letter ('A', 'B'...'Z')


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[MAIN MENU]
Intel(R) ME General Settings
Intel(R) AMT Configuration
Exit
Intel(R) ME New Password
[ESC] : Exit
[ENTER] : Submit

4. You will be asked to verify the password. Enter the same new password in the space provided under Verify Password and then press Enter.



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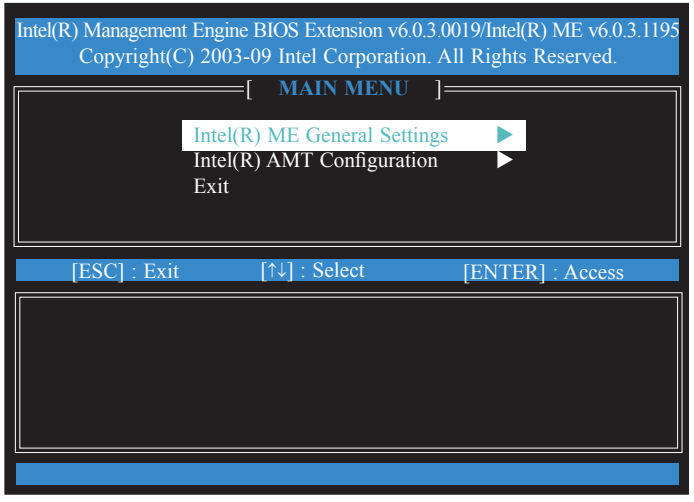
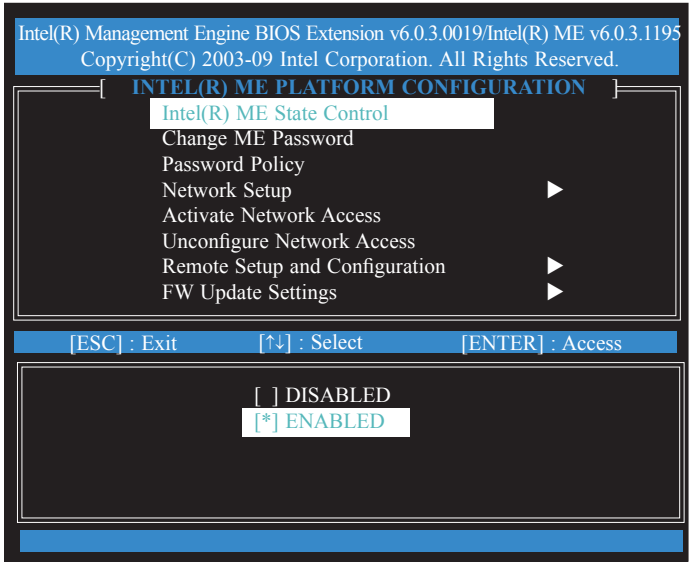
5. Select **Intel(R) ME General Settings** and then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[MAIN MENU]
Intel(R) ME General Settings
Intel(R) AMT Configuration
Exit
[ESC] : Exit
[↑↓] : Select
[ENTER] : Access

6. Select **Intel(R) ME State Control** and then press Enter.
   Select **Enabled** and then press Enter.



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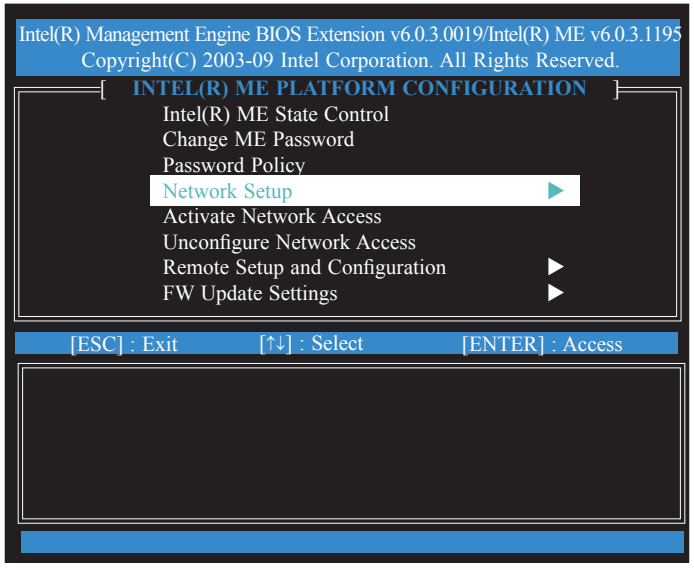
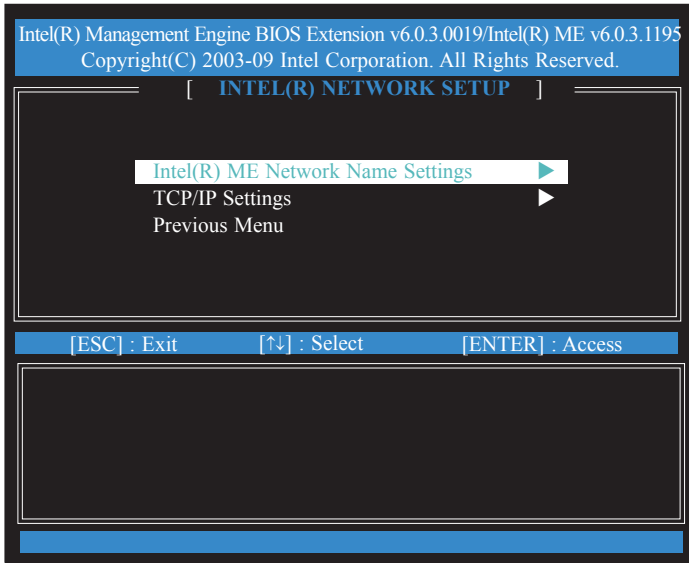
7. Select **Network Setup** and then press Enter.



8. In the Intel(R) Network Setup menu, select **Intel(R) ME Network Name Settings** then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[INTEL(R) NETWORK SETUP]
Intel(R) ME Network Name Settings
TCP/IP Settings
Previous Menu
[ESC] : Exit
[↑↓] : Select
[ENTER] : Access

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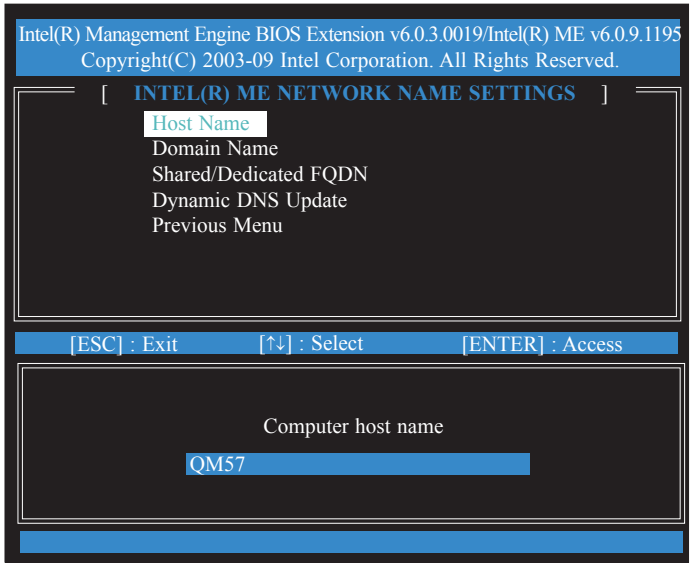
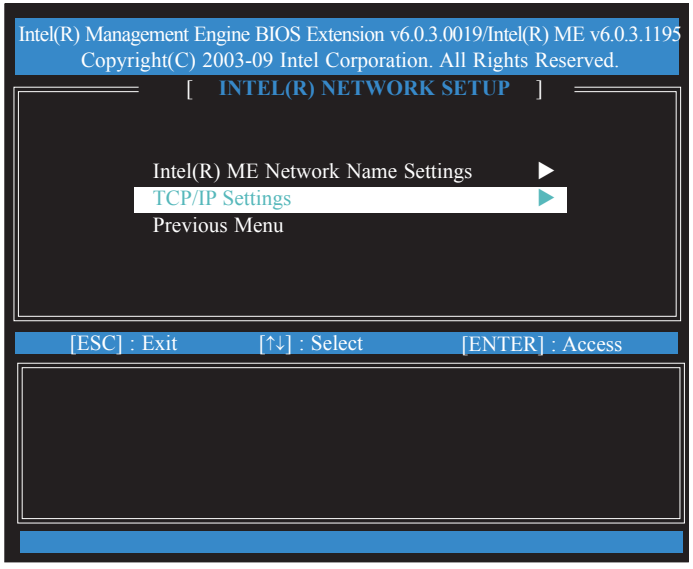
9. In the Intel(R) ME Network Name Settings menu, select **Host Name** and then press Enter.
   Enter the computer's host name (for example: QM57) and then press Enter.
   Select **Previous Menu** and then press Enter.



10. In the Network Setup menu, select **TCP/IP Settings** and then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[INTEL(R) NETWORK SETUP]
Intel(R) ME Network Name Settings
TCP/IP Settings
Previous Menu
[ESC] : Exit
[↑↓] : Select
[ENTER] : Access

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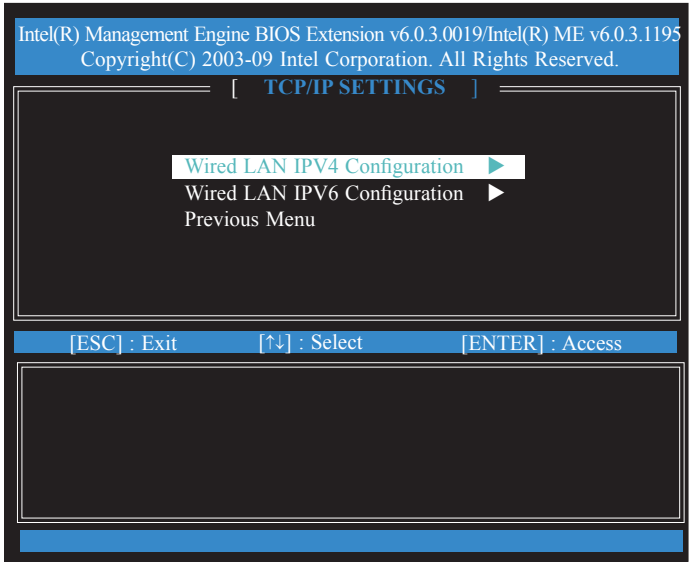
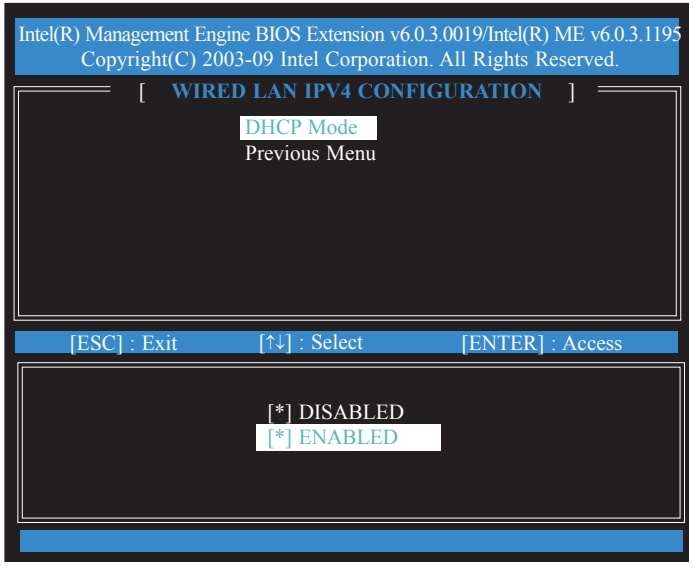
11. In the TCP/IP Settings menu, select **Wired LAN IPV4 Configuration** and then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[TCP/IP SETTINGS]
Wired LAN IPV4 Configuration ▶
Wired LAN IPV6 Configuration ▶
Previous Menu
[ESC] : Exit
[↑↓] : Select
[ENTER] : Access

12. Select **DHCP Mode** and then press Enter.
    Select **Enabled** or **Disabled** and then press Enter.



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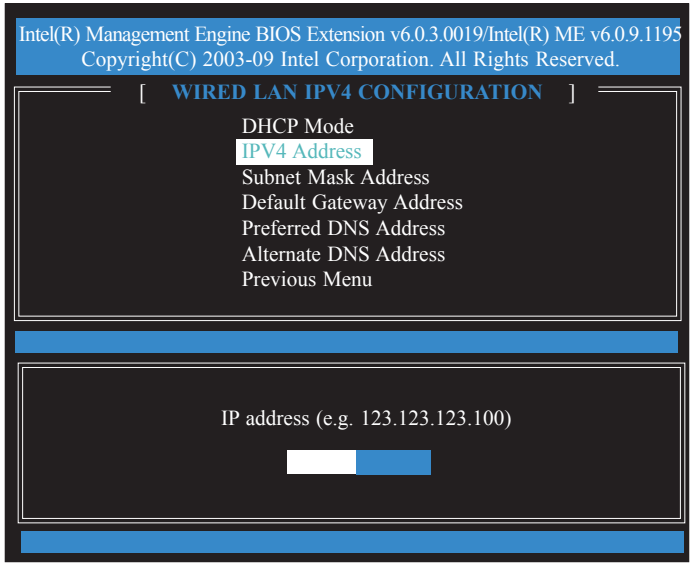
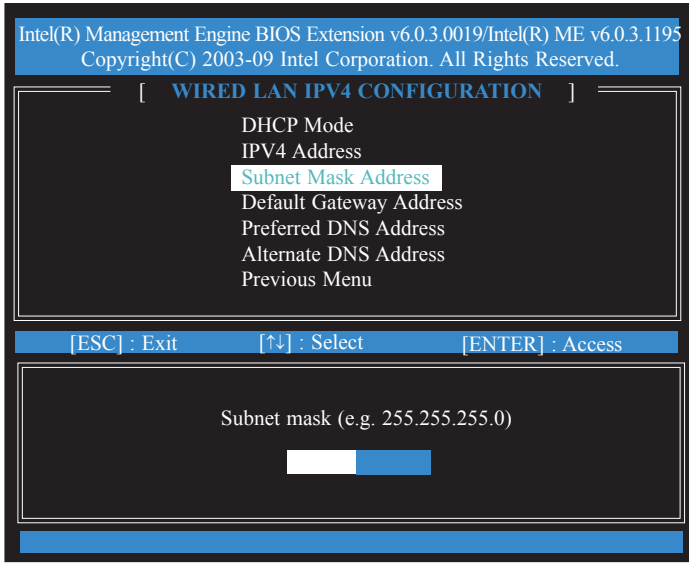
13. A list of options in the Wired LAN IPV4 Configuration menu will appear. Select **IPV4 Address** and then press Enter. Enter an **IP Address** then press Enter.



14. Select **Subnet Mask Address** and then press Enter. Enter the **subnet mask address** and then press Enter.



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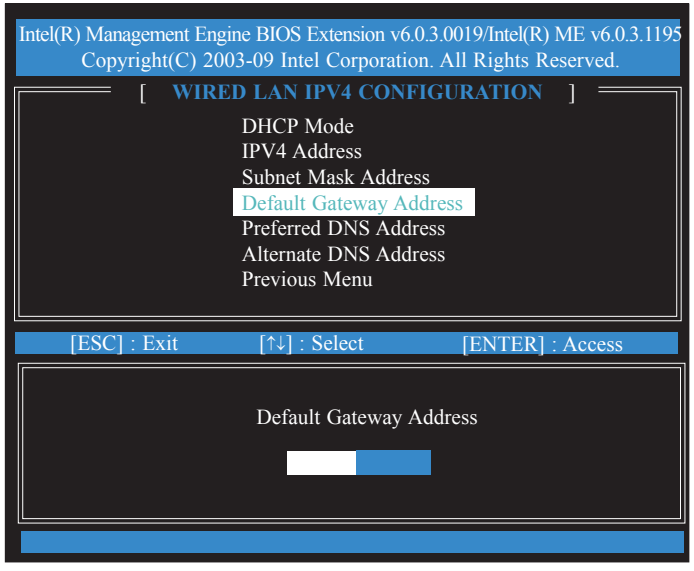
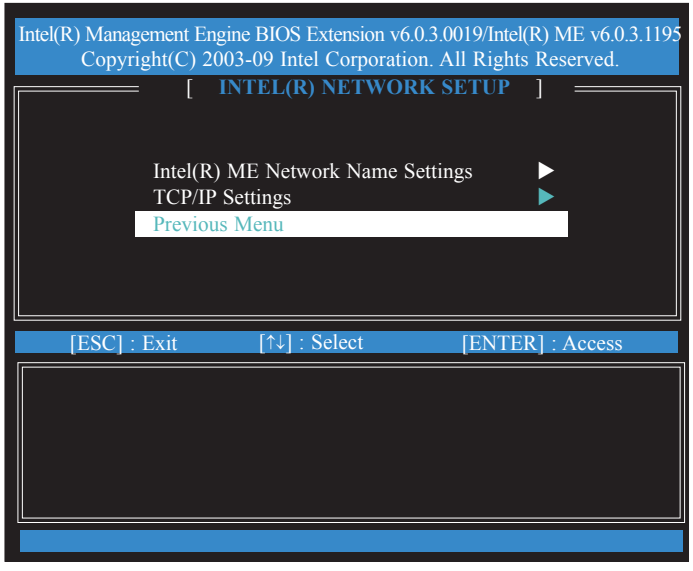
15. Select **Default Gateway Address** and then press Enter.

    Enter the **default gateway address** and then press Enter.



16. Select **Previous Menu** and then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[INTEL(R) NETWORK SETUP]
Intel(R) ME Network Name Settings
TCP/IP Settings
Previous Menu
[ESC] : Exit
[↑↓] : Select
[ENTER] : Access

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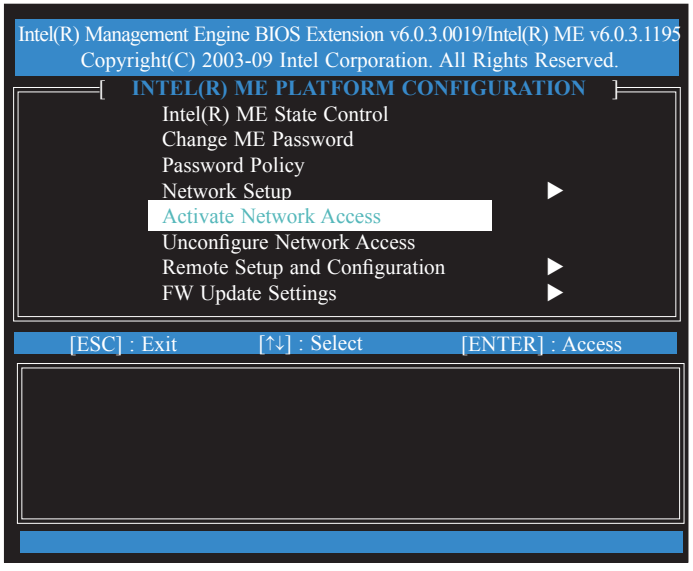
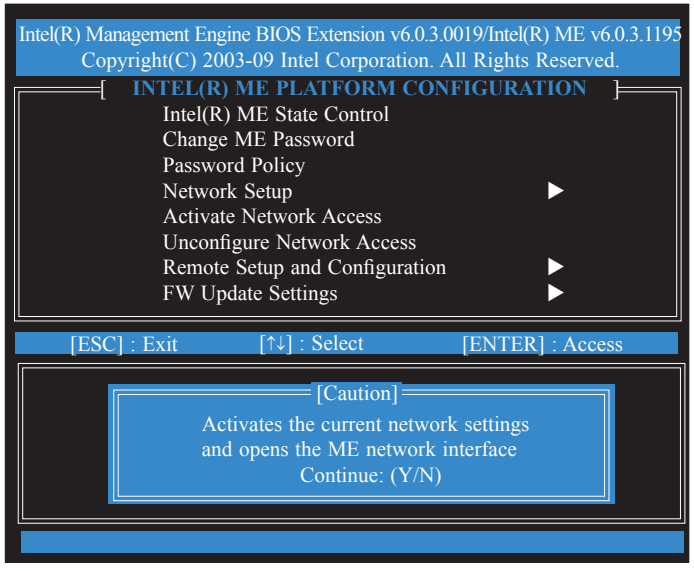
17. Select Previous Menu until you return to the **Intel(R) ME Platform Configuration** menu.
    Select **Activate Network Access** and then press Enter.



18. Type **Y** and then press Enter.



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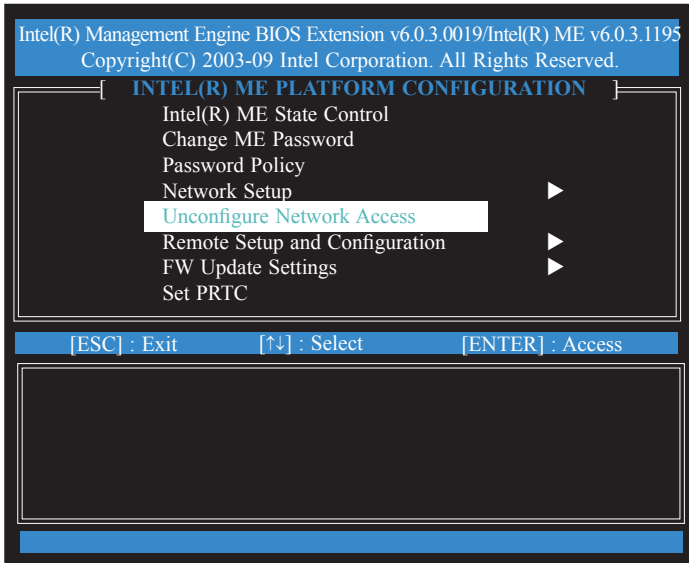
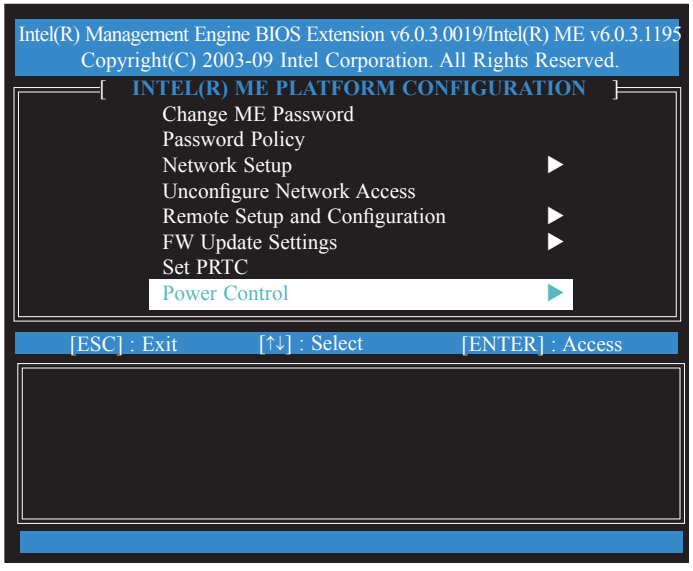
19. In the Intel(R) ME Platform Configuration menu, select **Unconfigure Network Access** and then press Enter. Clear all network settings.



20. In the Intel(R) ME Platform Configuration menu, select **Power Control** and then press Enter.



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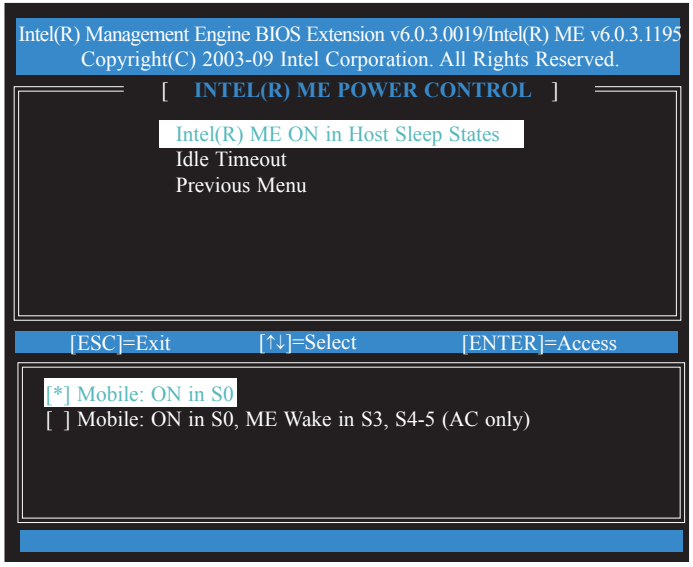
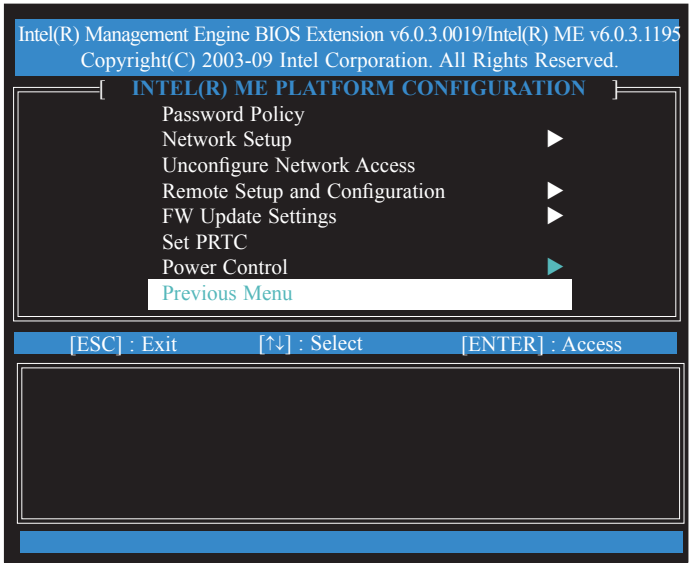
21. In the Intel(R) ME Power Control menu, select **Intel(R) ME ON in Host Sleep States** and then press Enter.
    Select **Mobile: ON in S0** and then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[INTEL(R) ME POWER CONTROL]
Intel(R) ME ON in Host Sleep States
Idle Timeout
Previous Menu
[ESC]=Exit [↑↓]=Select [ENTER]=Access
[*] Mobile: ON in S0
[ ] Mobile: ON in S0, ME Wake in S3, S4-5 (AC only)

22. Select **Previous Menu** and then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[INTEL(R) ME PLATFORM CONFIGURATION]
Password Policy
Network Setup
Unconfigure Network Access
Remote Setup and Configuration
FW Update Settings
Set PRTC
Power Control
Previous Menu
[ESC] : Exit [↑↓] : Select [ENTER] : Access

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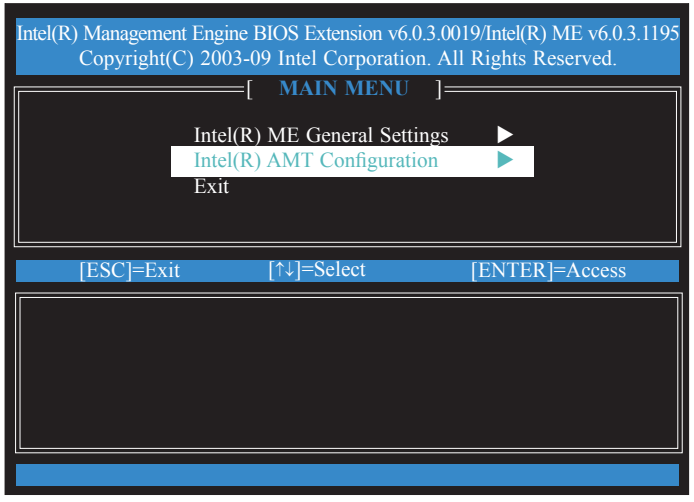
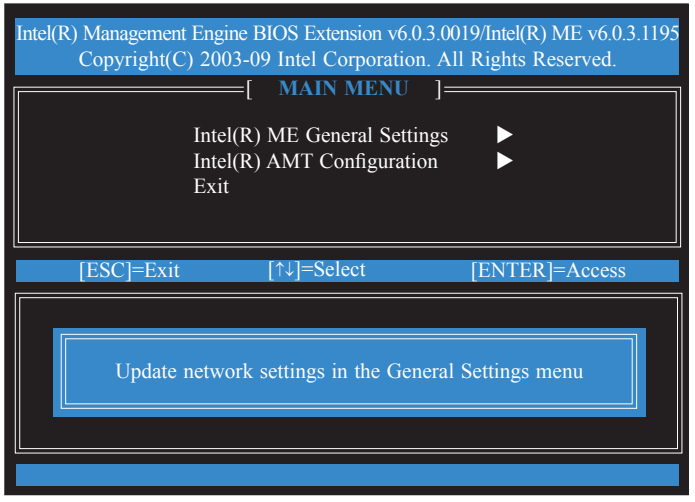
23. Select Previous Menu until you return to the Main Menu. Select **Intel(R) AMT Configuration**.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[MAIN MENU]
Intel(R) ME General Settings
Intel(R) AMT Configuration
Exit
[ESC]=Exit [↑↓]=Select [ENTER]=Access

24. The message below will appear.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[MAIN MENU]
Intel(R) ME General Settings
Intel(R) AMT Configuration
Exit
[ESC]=Exit [↑↓]=Select [ENTER]=Access
Update network settings in the General Settings menu

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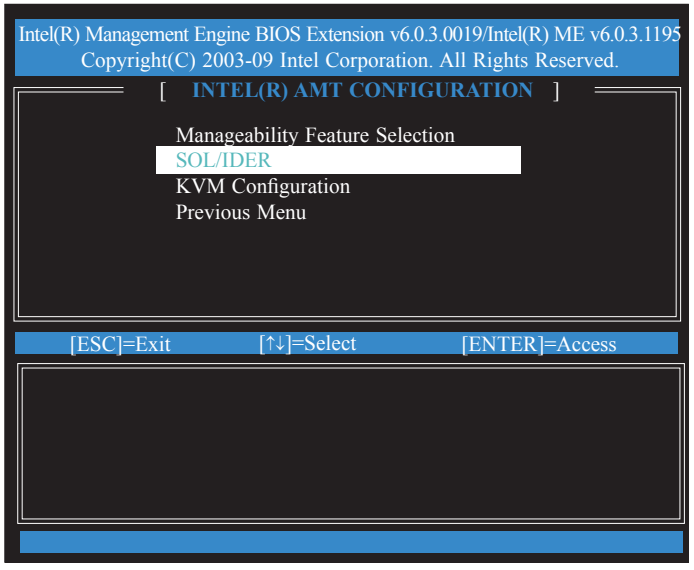
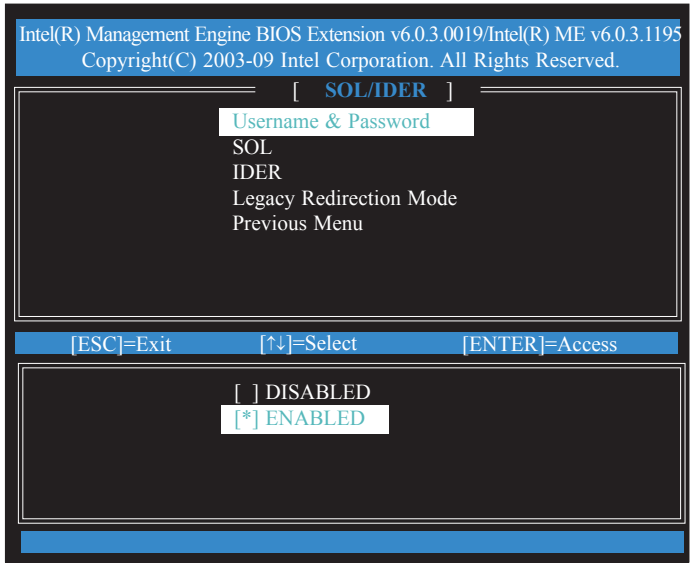
25. In the Intel(R) AMT Configuration menu, select **SOL/IDER** and then press Enter.



26. In the SOL/IDER menu, select **Username & Password** and then press Enter.
    Select **Enabled** and then press Enter.



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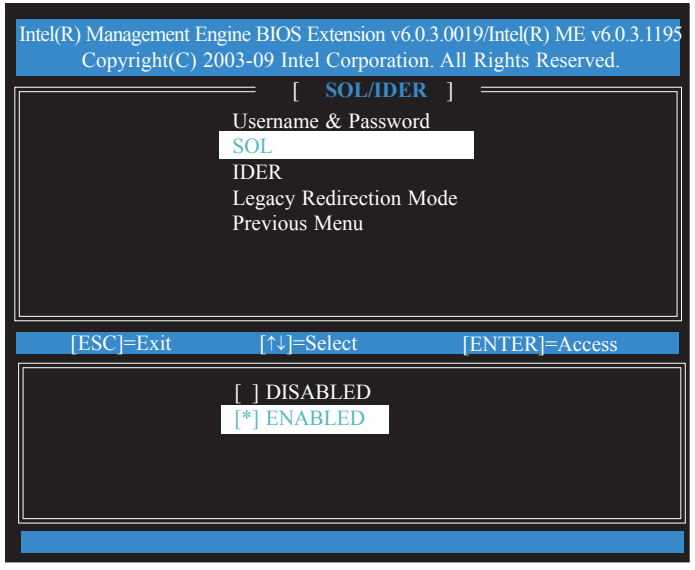
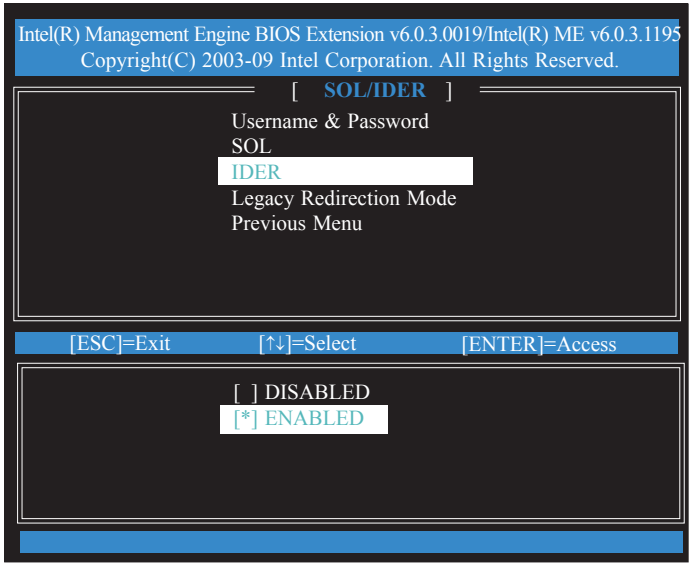
27. In the SOL/IDER menu, select **SOL** and then press Enter. Select **Enabled** and then press Enter.



28. In the SOL/IDER menu, select **IDER** and then press Enter. Select **Enabled** and then press Enter.



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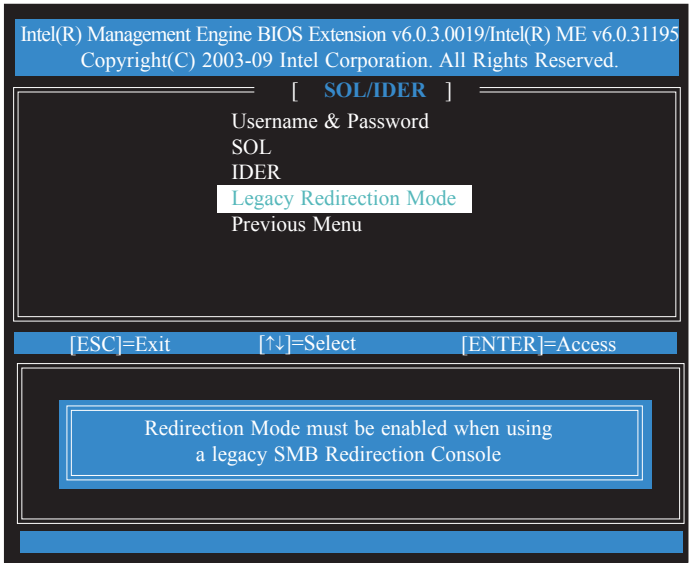
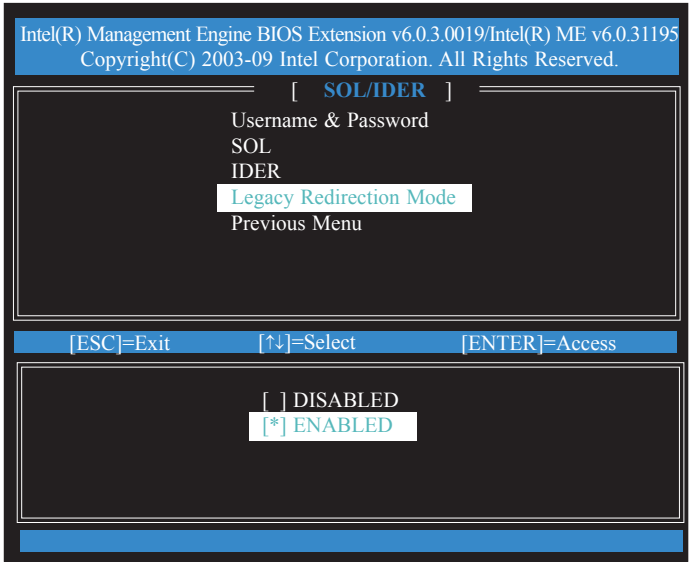
29. In the SOL/IDER menu, select **Legacy Redirection Mode** and then press Enter.



30. Select **Enabled** and then press Enter.



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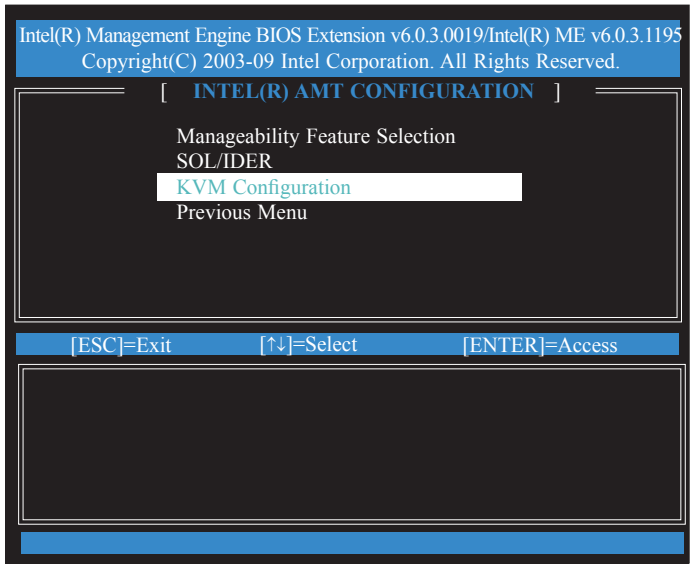
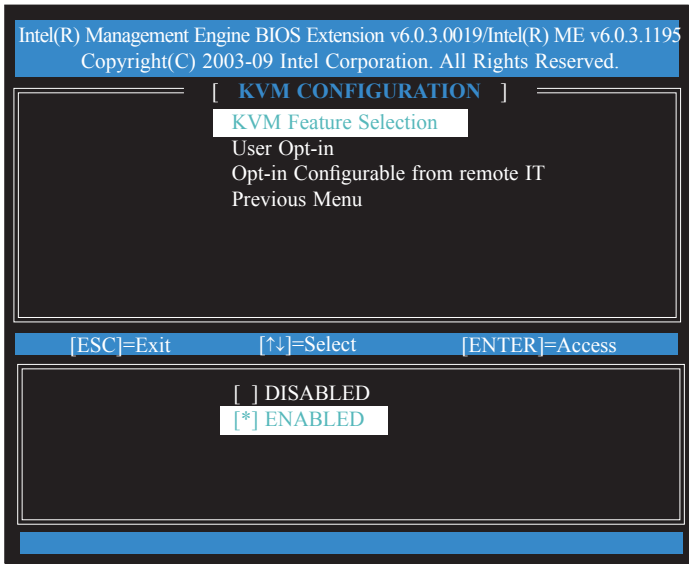
31. Select Previous Menu until you return to the **Intel(R) AMT Configuration** menu.
    Select **KVM Configuration** and then press Enter.



32. In the KVM Configuration menu, select **KVM Feature Selection** and then press Enter.
    Select **Enabled** and then press Enter.



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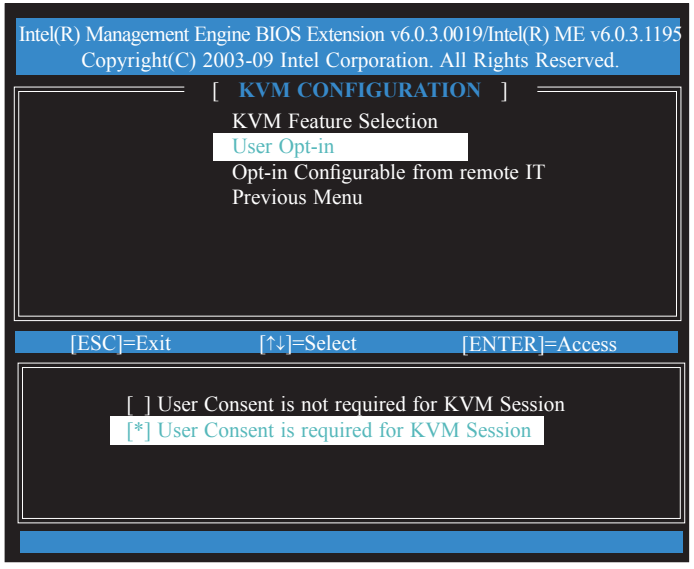
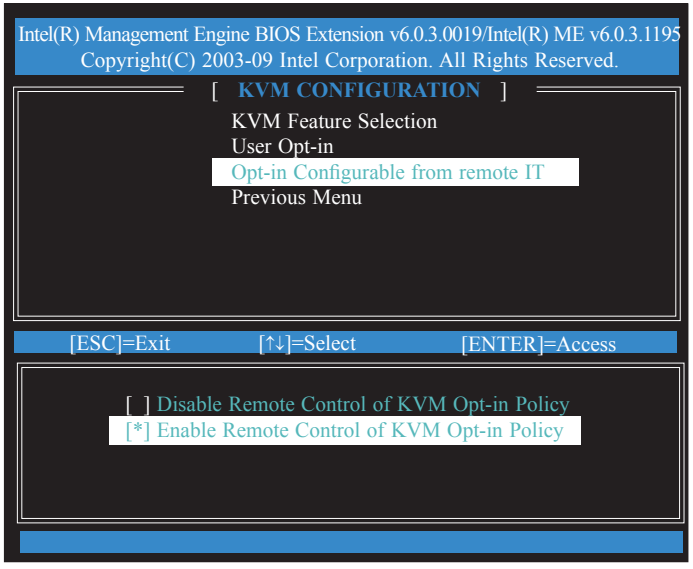
33. In the KVM Configuration menu, select **User Opt-in** and then press Enter.
    Select **User Consent is required for KVM Session** and then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[KVM CONFIGURATION]
KVM Feature Selection
User Opt-in
Opt-in Configurable from remote IT
Previous Menu
[ESC]=Exit
[↑↓]=Select
[ENTER]=Access
[ ] User Consent is not required for KVM Session
[*] User Consent is required for KVM Session

34. In the KVM Configuration menu, select **Opt-in Configurable from Remote IT** and then press Enter.
    Select **Enable Remote Control of KVM Opt-in Policy** and then press Enter.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[KVM CONFIGURATION]
KVM Feature Selection
User Opt-in
Opt-in Configurable from remote IT
Previous Menu
[ESC]=Exit
[↑↓]=Select
[ENTER]=Access
[ ] Disable Remote Control of KVM Opt-in Policy
[*] Enable Remote Control of KVM Opt-in Policy

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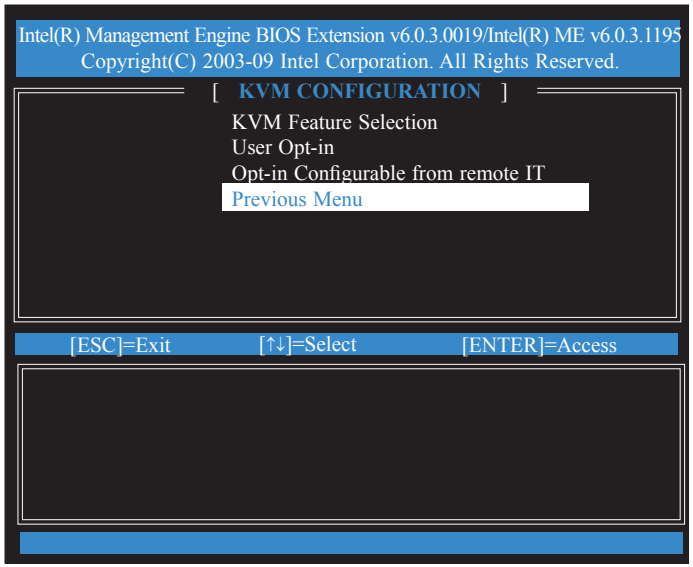
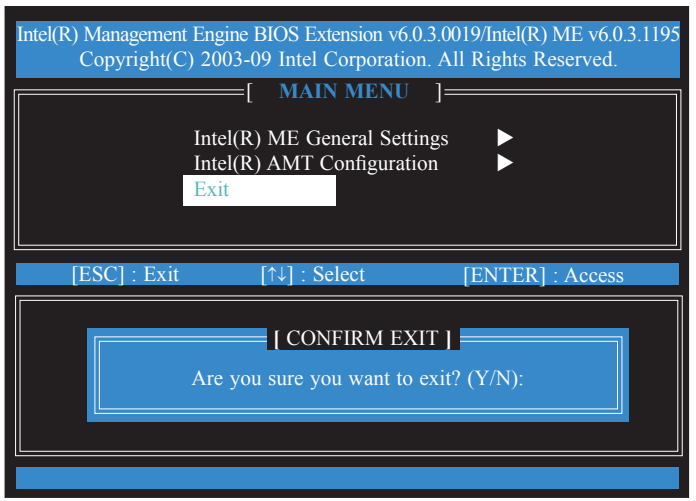
35. Select **Previous Menu**.



36. Select Previous Menu until you return to the Main Menu. Select **Exit** and then press Enter.
    The following message will be displayed on the screen.
    [CONFIRM EXIT]
    Are you sure you want to exit? (Y/N):
    Press Y.


Intel(R) Management Engine BIOS Extension v6.0.3.0019/Intel(R) ME v6.0.3.1195
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
[MAIN MENU]
Intel(R) ME General Settings
Intel(R) AMT Configuration
Exit
[ESC] : Exit
[↑↓] : Select
[ENTER] : Access
[CONFIRM EXIT]
Are you sure you want to exit? (Y/N):

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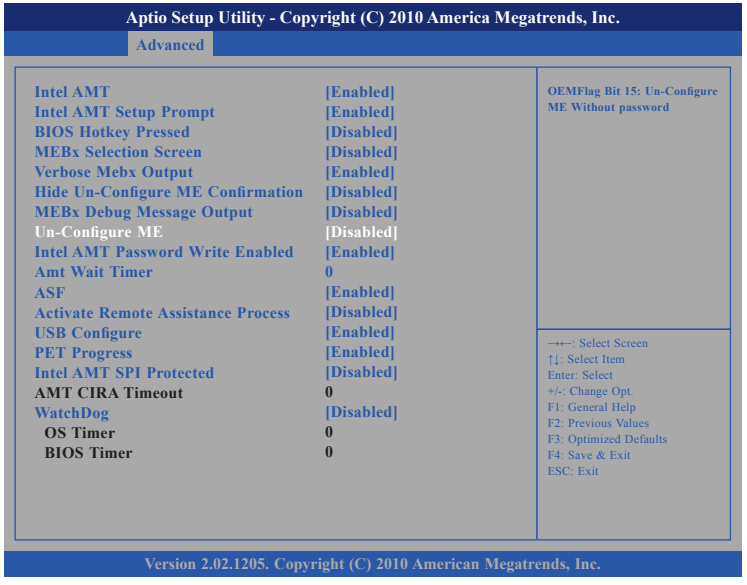
Unconfigure AMT/ME

1. In the Advanced menu, select **AMT Configuration**.

2. In the **Unconfigure AMT/ME** field, select Enabled. Clear all ME settings.



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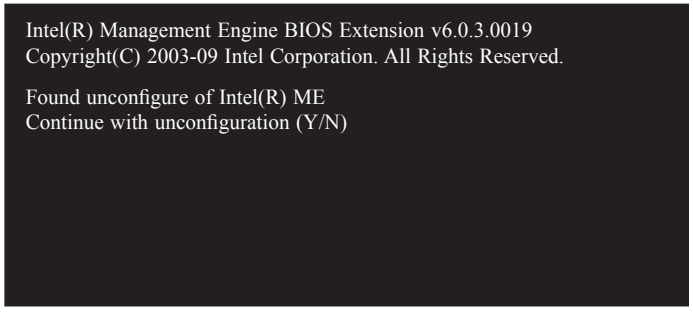
3. The message below will appear. Type **Y**.


Intel(R) Management Engine BIOS Extension v6.0.3.0019
Copyright(C) 2003-09 Intel Corporation. All Rights Reserved.
Found unconfigure of Intel(R) ME
Continue with unconfiguration (Y/N)

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Appendix A: Watchdog Timer

NDiS 166 features a watchdog timer that resets the CPU or generates an interrupt if the processor stops operating for any reason. This feature ensures system reliability in industrial standalone or unmanned environments.

Watchdog Timer Control Register (Index=71h, Default=00h)

Bit	Description
7	WDT is reset upon a CIR interrupt.
6	WDT is reset upon a KBC (mouse) interrupt.
5	WDT is reset upon a KBC (keyboard) interrupt.
4	WDT is reset upon a read or a write to the Game Port base address.
3-2	Reserved
1	Force Time-out. This bit is self-clearing.
	WDT Status
0	1: WDT value reaches 0.
	0: WDT value is not 0.

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Watchdog Timer Configuration Register (Index=72h, Default=001s0000b)

Bit	Description
7	**WDT Time-out value select 1** 1: Second 0:Minute
6	**WDT output through KRST (pulse) Enable** 1: Enable 0: Disable
5	**WDT Time-Out Value Extra Select** 1: 64ms x WDT Timer-out value (default=4s) 0: Determined by WDT Time-out value select 1 (bit 7 of this register)
4	**WDT Output through PWEGD Enable** 1: Enable 0: Disable During LRESET# this bit is selected by JP2 power-on strapping option.
3-0	**Interrupt level Select for WDT.**

Watch Dog Timer Time-out value (LSB) Register (Index=73h, default=38h)

Bit	Description
7-0	**WDT Time-out value 7-0**

Watch Dog Timer Time-out value (MSB) Register (Index=74h, default=00h)

Bit	Description
7-0	**WDT Time-out value 15-8**

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Appendix B: GPI/O Programming Guide

This appendix provides definitions for the GPI/O pins in NDiS 166. GPI/O (General Purpose Input/Output) pins are provided for custom system design. The pin programmed as input mode (GPI) or output mode (GPO) depends on the configuration.

GPIO Configuration

Address: A02

DATA	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
GPIO mapping	GPI4	GPI3	GPI2	GPI1	X	X	X	GPO4

Address: A00

DATA	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	10
GPIO mapping	X	X	X	GPO3	X	GPO2	GPO1	X	GPI 3

Example:

Output data (1010) through GPO
Setp1: At Debug mode
Setp2: Set Data at address A02 and A00

C:\debug
-o A02 F1
-o A00 ED

Read data from GPI
Setp1: At Debug mode
Setp2: Read Data at A02 (Input data is 1010)

C:\debug
-i A02
-AF

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